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PROGRAM MANAGER FOR ROCKY MOUNTAIN ARSENAL

U.S. ARMY
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— COMMITTED TO PROTECTION OF THE ENVIRONMENT —

IRA-F AIR QUALITY MONITORING PROGRAM
FINAL REPORT
Version 2.0

VOLUME II - APPENDICES
July 1991
CONTRACT NO. DAAA15-88-D-0024

EBASCO SERVICES INCORPORATED
Applied Environmental, Inc.
CH2M HILL DataChem, Inc.
R. L. Stollar & Associates, Inc.

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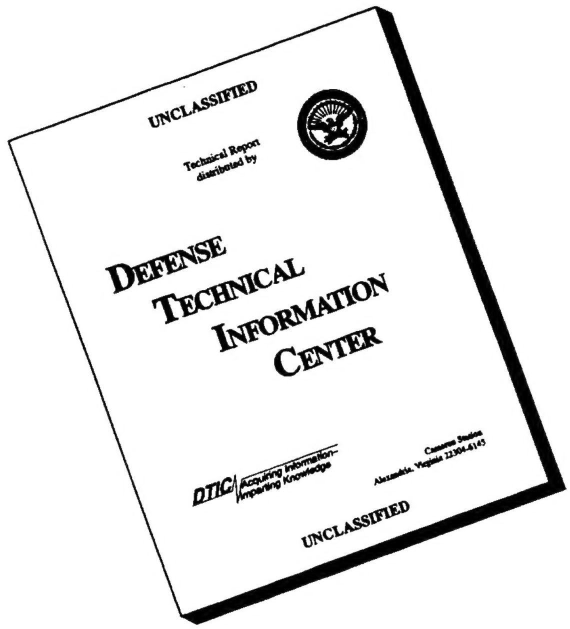

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TECHNICAL SUPPORT FOR ROCKY MOUNTAIN ARESNAL

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Prepared by:

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DataChem, Inc.

Prepared for:

Program Manager's Office for the
Rocky Mountain Arsenal

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THIS REPORT FOCUSES ON ACTIVITIES OF THE INTERIM RESPONSE ACTION F (IRA-F) MONITORING PROGRAM AT RMA, AND IT PROVIDES AN ANALYSIS OF AIR QUALITY CONDITIONS AROUND BASIN F, BOTH DURING AND AFTER REMEDIAL ACTIVITIES. INCLUDED IN THIS REPORT ARE THE DETAILS OF THE AIR MONITORING AND ANALYTICAL PROCEDURES FOR IRA-F AND A SYNOPSES OF OTHER AIR MONITORING PROGRAMS. THE AMBIENT AIR CONCENTRATIONS FOR A SET OF AIRBORNE TARGET COMPOUNDS ARE SUMMARIZED. TARGETS INCLUDE VOLATILE ORGANICS, SOME VOLATILE ORGANICS, METAL, ARSENIC AND PARTICULATES, THE RESULTS PROVIDE THE INFORMATION NECESSARY TO DESCRIBE THE POTENTIAL IMPACTS OF BASIN F OPERATIONS AND CLOSURE ON AMBIENT AIR QUALITY, AND TO CHARACTERIZE THE POTENTIAL SOURCES OF THE OBSERVED CONCENTRATIONS OF TARGET COMPOUND.

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Appendix A

IRA-F Field Program

Standard Operating Procedures

IRA-F AIR MONITORING PROGRAM

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IRA-F AIR MONITORING PROGRAM

1.0 TASK AND RATIONALE

The objective of the IRA-F program is to obtain air quality measurements, on a regular basis, at sites in close proximity to the remediated Basin F area of Rocky Mountain Arsenal (RMA). The project commenced May 9, 1989 and combined pre-existing efforts of the RIFS3 and Basin F air monitoring projects. The transition period between the active earth moving operations of the Basin F interim action, and the stabilization of the waste pile includes monitoring of previous sites from the Basin F project and the site RIFS1. Ultimately, monitoring will be focused on the waste pile at the southern end of the restored basin, the restored basin itself, the retention ponds north of the restored basin and the storage tanks northeast of the restored basin. This will include the relocation of some sites and the decommissioning of other sites. The IRA-F sampling program is coordinated with the Comprehensive Monitoring Program (CMP) which is conducted on an Arsenal-wide basis. Meteorological data collected by the CMP program are used by the IRA-F project in calculating sample volumes and to evaluate sampling results, therefore no meteorological monitoring under the IRA-F project is planned. Analytes to be monitored by the IRA-F program are volatile organic compounds (VOC), semivolatile organic compounds (SVOC) which include organochlorine pesticides (OCP), mercury and total suspended particulates (TSP). The TSP samples are also analyzed for metals and arsenic. Additionally, the respirable fraction of the total suspended particulates, PM-10, are monitored.

2.0 HEALTH AND SAFETY

The Health and Safety Plan (HASP) for the IRA-F project was prepared in conformance with the Ebasco Health and Safety Program for hazardous waste sites. This document was dated July 26, 1989 and was recorded as file IRA-EDEN-GEN-M-017. Because the IRA-F project is an element of the Remedial Investigation/Feasibility Study (RI/FS) at the RMA site, the HASP for the RI/FS project is referenced in the IRA-F HASP.

3.0 QUALITY ASSURANCE OBJECTIVE

The objective of the quality assurance procedures is to provide data of known quality which conform to the project's final data usability requirements. Field data quality assurance begins with the preparation of media for sampling. The following procedures were designed to ensure the quality of the sample, and accuracy of related calculations. The long term goal is to maintain the integrity of the data for use during any litigation proceedings.

3.1 Field QA/QC - Control Samples

A control sample is used to monitor the performance of the sampling and analytical systems. The total number of control samples taken depends on the field conditions and the potential for sample contamination. Once background contamination has been assessed, control sample requirements may change.

3.1.1 Field Blanks

A field blank is a sample of analyte-free media, identical to the sample matrix, which is exposed to the ambient environment at the sampling site. The field blank is used to document any contamination which occurs during media handling procedures. The number of field blanks collected must equal or exceed five percent of the total number of samples taken over the sampling period. For example, if 500 samples are to be taken over a nine month period, a total of 25 field blanks would be required to accompany routine samples at regular intervals. This requirement may be satisfied by exposing a field blank for each media type during every sample period.

3.1.2 Trip Blanks

A trip blank is a single unit of analyte-free media shipped from the laboratory to the sample preparation site, then returned to the laboratory unopened. The purpose of a trip blank is to document any contamination which might be attributed to shipping and field transportation procedures. Trip blanks are collected whenever deemed necessary by the Quality Control personnel.

3.1.3 Collocated Samples

Collocated samples are duplicate samples which are collected as close as possible to the same location and time, as the primary samples. The objective is to produce two samples which are virtually identical. These samples are used to document the precision of the sampling and analytical processes. Collocated samples are collected for approximately five percent of the total number of samples taken during a sampling period. This requirement is satisfied by collection of collocated SVOC/OCP and VOC samples every other SVOC/OCP and VOC sample period and collection of collocated mercury and TSP/metals samples every mercury and TSP/metals sample period.

3.1.4 Spiked Samples

A spiked sample is a unit of analyte-free media, identical to the media of a routine sample, to which a known concentration of target analyte is added. Introduction of the spiking solution is accomplished immediately prior to activation of the sampler. Once the media has been spiked, it is otherwise handled routinely during reclamation and analysis. Spiking is performed to assess the efficiency of sampling and analysis, based on the percentage recovery of the known spiking analyte. Spiked samples are taken when determined by Quality Control personnel, but normally once per season to

provide data on percent recovery and possible compound degradation of analytes during typical weather conditions for each season.

The following field spiking procedure for semivolatile organic compounds/ organochlorine pesticides (SVOC/OCP) has been established to provide consistent field results. The initial set-up and scheduling of field spiking events, spiking procedures, and shipment of samples to the laboratory are discussed below.

EQUIPMENT:

- Hamilton gas-tight syringes
- Spiking solutions (in amber vials with teflon lined caps)
- Nalgene tub with snap lid (for carrying the spiking kit)
- Foam rubber holder for solutions
- Solvent rinses (in amber vials with teflon lined caps)
- Latex gloves
- Felt spiking pad

3.1.4.1 Spiking Procedure

The sampling site has three collocated PS-1 samplers. The media of samplers are charged with identical amounts of spiking solution. The third sampler is used for the unspiked control sample.

1. Prepare three dual sampling modules as for normal samples, except that two modules will have felt spiking pads added over the normal quartz filters. The felt pads will receive the spiking solution when the samples are spiked.

2. Prepare the spiking kit for transport to the field. The kit consists of a nalgene tub containing foam rubber holders to protect the vials for spiking solutions, rinse solutions and waste. Syringes should be secured in the nalgene tub. The tub with the spiking solution is refrigerated at 4 degrees Centigrade until it is transported to the field.

3. Before spiking, change into the appropriate protective clothing for the sampling location, then remove the nalgene tub from refrigeration to allow the spiking solution to equilibrate to ambient temperature. It is not necessary to allow a long equilibration period, the time it takes to travel to the sample site is sufficient. (Equilibration of temperature is necessary so the solution and syringe are the same temperature. Unequal temperatures may result in inaccurate volume measurement of the spiking solution.)

4. Upon arrival at the site, position the spiking kit so it is downwind from the samplers. Put on the latex gloves. Record all appropriate information on the routine sampling data sheets.

5. Install the sampling modules into the PS-1 samplers, being sure they are secure in the units.

6. Start all three samplers and allow them to run approximately five minutes to warm up. Shut off the samplers, and proceed with the spiking procedure.

7. Mark the side of the vial at the initial level of the spiking solution.

8. Rinse the syringe with clean hexane solvent, then rinse with the spiking solution. Discard the waste solutions in the waste vials. Draw the required amount of spiking solution into the syringe.

9. Note the actual amount shown in the syringe and record that amount on the sampling data sheet.

10. Flood the measured volume onto the felt spiking pad, which was installed on top of the quartz filter.

11. Quickly repeat steps 7 through 10 for the duplicate sample.

12. Mark the vial at the new solution level.

13. Activate all three samplers at the same time. Record the start time on the sampling data sheets. Record which samples received spiking solution and the amount of spiking solution introduced to each sample.

14. Rinse the syringe, dispose of the waste solvent into the waste vial and replace the spiking equipment in the nalgene container. Be sure all caps on the vials are secure. Remove the latex gloves and place in a plastic bag for later disposal.

15. Record the flow indications from all three samplers before leaving the sampling location.

16. Return to the field office and place the spiking kit in the refrigerator. Dispose of the gloves properly.

17. Removal and reclamation procedures for spiked samples are identical to those of normal samples, except that the felt spiking pad is included, along with the quartz filter, in the glass sleeve on top of the PUF.

NOTE: After the samples have been reclaimed, the sample modules are rinsed in hexane to remove any possible remains of the spiking solution. A vented hood should be used when working with the hexane and the appropriate procedures for prevention of personal contamination from the spiking solution residues must be observed. Waste material from this cleaning operation must be disposed of properly.

3.2 QA of Field Documents

All documents produced in the field are checked for accuracy before final filing and data handling. The quality assurance chemist, computer analyst, or other field technicians may perform the QA review. Data entered into computer programs are typically checked by other air personnel. Field calibration sheets are sent to the main office where calculations are verified. Any discrepancies are sent back to the field for correction, or are corrected by the person identifying the problem. Chain-of-custody (COC) sheets are also sent to the main office, where they are checked and tracked by data management. Any discrepancies are corrected according to directions from the Quality Assurance personnel. Typically, the original COC is photocopied and the required corrections are made to the photocopy. A written explanation is added to the top of the page, and new copies are distributed to the appropriate destinations. Additionally, the computer file is corrected and replaced. Corrections may occasionally be made by phone, with all parties entering corrections in red ink.

3.3 Audit Procedures/Corrective Actions

Field audits and document audits are performed to assure proper field procedures are followed, and that proper documentation is made of those procedures. Field audits are scheduled once per quarter and are performed by trained personnel who are not directly involved in the day-to-day activities of the audited project. Field operating procedures such as calibration of sampling and meteorological equipment are checked by the auditors. Guidelines employed for the audit are provided by the Environmental Protection Agency (NEIC Policies and Procedures Manual. EPA-33019-78-001-R, May 1978. Revised May 1986.)

Documentation of the field sampling calibrations, daily logs, maintenance of equipment, and any correspondence are checked during the audit for completion and accessibility. All field sampling activities must be traceable with respect to activities and responsible personnel.

Any non-conformance found during the audit requires that the non-conformance be corrected, or that an explanation be made as to why it cannot be corrected. Corrective action forms are used when the sampling procedures are not followed or a sample has been lost or otherwise invalidated by the actions of field personnel, Figure 3-1, Corrective Action Form.

Figure 3-1 Corrective Action Form

REF: ______________________
JOB NUMBER: ______________________
SITE NUMBER: ______________________

INTERIM REMEDIAL ASSESSMENT 6

QUALITY ASSURANCE / QUALITY CONTROL
FIELD CORRECTIVE ACTION REPORT
MATRIX: __________

SAMPLER COMMENTS:

SIGNATURE: DATE:

SITE MANAGER COMMENTS:

SITE MANAGER SIGNATURE: DATE:

QUALITY ASSURANCE COMMENTS:

PROJECT QA/QC SIGNATURE: DATE:

MANAGEMENT ACTION:

SIGNATURE: DATE:

PW:MEC
REV. 5-11-89

4.0 AIR QUALITY SAMPLING

4.1 Sampling Frequency

4.1.1 Routine Samples

Sampling is conducted on the standard EPA six day schedule, which is the same schedule followed by the CMP, however, volatiles and semivolatiles are sampled more frequently than particulates and metals. Every sixth day, SVOC/OCP, and VOC samples are collected. Samples run for 24 hours from approximately noon Mountain Standard Time (MST) on the day prior to the EPA sample day to noon of the EPA sample day. Sampling for TSP, PM-10 and mercury (Hg) is conducted on a 12 day schedule (every other EPA sample day), these samples run for 24 hours from midnight to midnight MST on the scheduled sample day. For example, if June 3rd is an EPA sample date, the SVOC/OCP, VOC and mercury samples begin at noon on June 2nd and end at noon on June 3rd. The TSP and PM-10 samples begin at midnight between the 2nd and 3rd, and end at midnight 24 hours later. The next sample day for SVOC/OCP and VOC will be June 9, and the next sample day for particulates and metals will be June 15.

With the exception of PM-10 samples, one field blank is collected for each media type on every sample day. Field blanks are always exposed at site FC-2. Duplicate samples are collected for Hg and TSP every 12th day in conjunction with the TSP, PM-10 and mercury sampling. The duplicate samples are always collected at site FC-2D which is collocated with site FC-2. The IRA-F sampling does not include collocated or field blank PM-10 samples. Because the CMP includes this type of sampling, and uses media and analyses from the identical laboratory, it was considered more cost effective to use the CMP PM-10 duplicate and filed blank results for quality assurance.

4.1.2 Special Samples

The SVOC/OCP spikes are currently collected at the collocated sites FC-2, FC-2D, and the mobile sampler which is designated FC-2M.

4.2 Sampler Locations

Site FC-1 was previously designated as BF-1 during the Basin F remediation (see Figure 4-1 for all site locations). This sampler is located west of Pond A and near the northwest edge of the restored basin. After completion of Basin F remediation the sites which had been designated as BF-2 and BF-2C were redesignated as sites FC-2 and FC-2D respectively. These sites are located on the eastern margin of the restored basin, southeast of Pond A. Site BF-3 initially had the same site designation, and identical location as site BF-3 of the Basin F remediation. This site was southeast of the waste pile. Site BF-3 was redesignated as site FC-3 on June 22, 1989, when it was moved about 60 feet to the top of a berm. Site BF-4 was initially in approximately the same location as it was during the Basin F remediation. When the Basin F contractor's trailers were removed, the equipment was removed from the tall platform, which had positioned the samplers above the trailers, and reinstalled on a standard height platform. This site was later redesignated as FC-4 and relocated eastward about 300 feet closer to the restored basin, atop a berm which is at approximately the same elevation as the basin. The location of site BF-5 is the same as it was for the Basin F project, about one mile north of Basin F. Site FC-5 is located about 150 feet north of Pond A. Site BF-7 is in the same location as it was for the Basin F project, just northwest of the RMA headquarters, Building 111. This was the location used for the June 25, 1989 spike samples. Site RIFS1 is in the same location as it was for the RIFS3 project, about one mile west of Basin F in the northwest

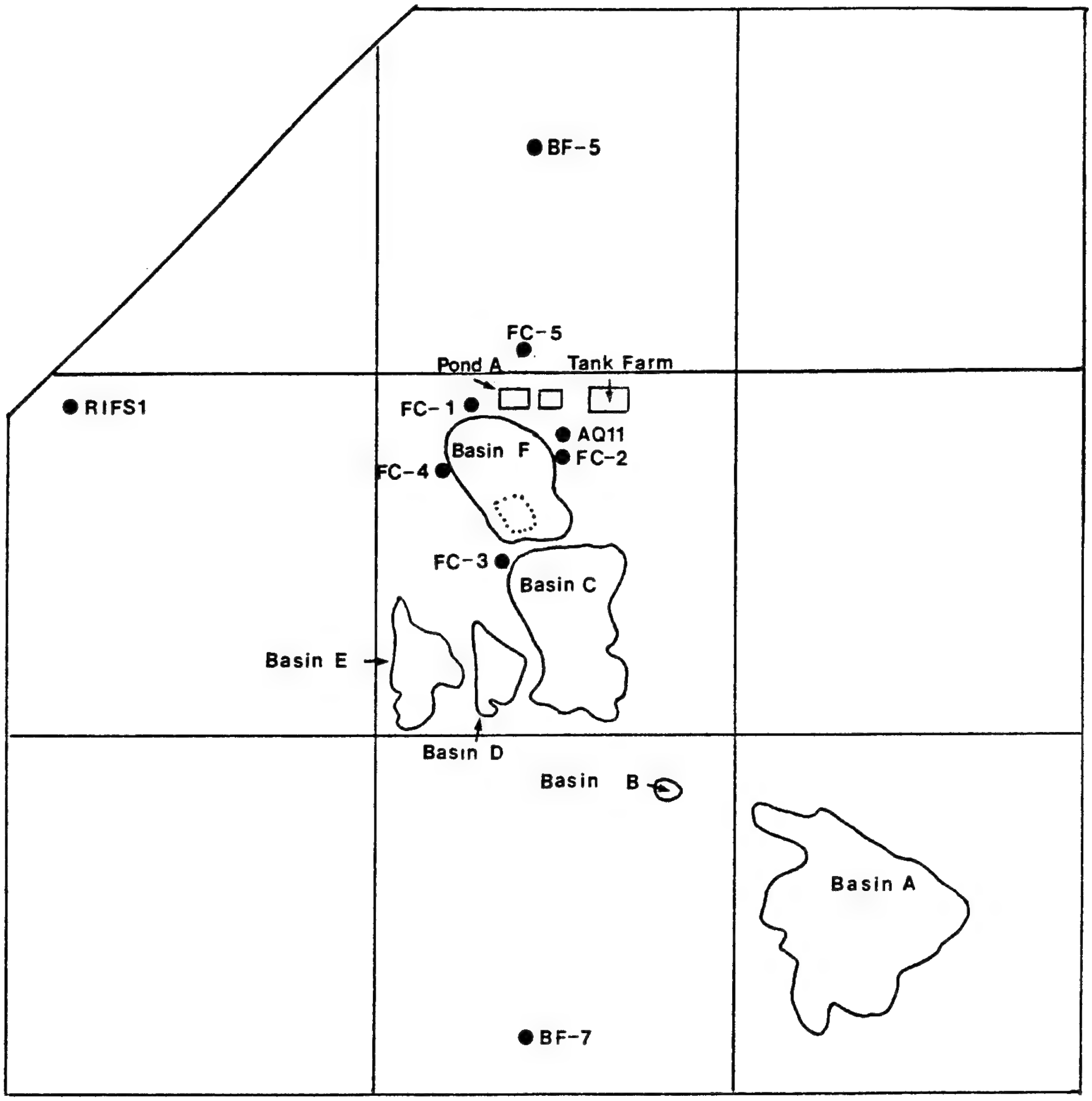


Figure 4-1 IRA-F Air Sampler Site Locations

corner of Section 27. (Sites BF-5, BF-7 and RIFS1 were utilized during the IRA-F project only in May and June of 1989.)

4.3 Types of Air Quality Sample Media

The sampling program includes sampling for total suspended particulates (TSP), the respirable fraction of suspended particulates (PM-10), semi-volatile organic compounds (SVOC), organochlorine pesticides (OCP), volatile organic compounds (VOC) and mercury (Hg). The TSP sampling medium is a flat, rectangular 20x25 centimeter (cm) fiberglass filter. The PM-10 sampling medium is a flat rectangular 20x25 cm quartz fiber filter. The SVOC/OCP sampling medium is a combination of a flat 10 cm diameter quartz fiber filter and a polyurethane foam (PUF) trap enclosed in a glass sleeve. Volatile organic compounds are sampled using a set of Tenax (T) and Tenax plus charcoal (T+C) filled glass tubes, each 10 cm long and 1.5 cm in diameter, connected in series. Mercury is sampled using Hydrar filled glass ampules 11 cm long and 0.8 cm in diameter.

4.4 Media and Data Sheet Preparation

4.4.1 Routine Samples

The media preparation area must be kept free of all potential contaminants including food, smoke, fragrances or volatiles of any kind. Media preparation is preceded by filling out sample data sheets for each sample type. Refer to Figures 4-2 and 4-3 for examples of each type of sample data sheet. Always use clean cotton gloves when handling sample media during setup or reclamation.

4.4.1.1 TSP and PM-10 Preparation

Prior to their use for TSP sampling, the pre-weighed fiberglass filters are stored in the dark brown folders in which they were shipped from Midwest Research Institute (MRI). Each folder bears an MRI bar-code number sticker, and additional identically numbered stickers are attached to the enclosed glassine envelope. The folders are stored in "MRI number" sequence. Unless a filter is damaged, these filters are used following the number sequence. An additional seven-digit media number is normally printed on each filter, however, some lots have been received with no printed numbers. The printed filter number is recorded on the outside of the brown folder, adjacent to the MRI bar-code sticker when both are present. Both the filter number and the MRI bar-code number are recorded on the data sheet. If a filter bears no printed number, only the MRI bar-code number is recorded on the data sheet. The quartz filters used in PM-10 sampling are packaged in the same fashion as the TSP filters. There are no printed numbers on the quartz filters. To insure accurate tracking of each filter, each filter frame has been marked with a site ID. Only the correctly marked filter frame should be used for a given sampler. Both the TSP and PM-10 filters are transported to and from the field in the three piece filter cartridges. To prepare the media for transport to the field, first put on a pair of clean cotton gloves, then:

1. Unscrew the knurled brass hold-down nuts and remove the top frame and snap cover of a TSP/PM-10 filter cartridge.

2. Using stainless steel forceps, slide the filter from the file folder onto the screen of the lower half of the cartridge, being sure the filter is number side up. For filters without numbers, examine the

Figure 4-2 Sample Data Sheet (6-Day)

Revised 02-07-90

EBASCO IRA-F AIR MONITORING
SAMPLING DATA SHEET

IRA-F SITE: ________

SVOC

*VOC

Sample # F__PU____|_ F__VC______| (Tenax) | (T+C)

MRI # ________ ______ (Tenax) | ______ (T+C)

Media # ______ | ______

SAMPLE INSTALLATION

INSTALLATION DATE ________ OPERATOR ______

TEMP(NEAREST 10 DEG.) ________
WIND(NEAREST 5 MPH) ________
WIND DIRECTION ________
SKY COVERAGE (%) ________
PRECIP. TYPE ________

VOTA GAUGE READING ________

START FLOW ________ ________

ELAPSED TIME________ ---) SAME ELAPSED TIME APPLIES-]

TIME OF DAY ________ ---) SAME TIME OF DAY APPLIES--]

FLOW CHECKS

	PM	AM
TEMP(NEAREST 10 DEG.)		
WIND(NEAREST 5 MPH)		
WIND DIRECTION		
SKY COVERAGE (%)		
PRECIP. TYPE		

	PM	AM
FLOW CHECK DATE:		
OPERATOR:		
VOTA GAUGE READING		
	PM	AM

	PM	AM
FLOW		
ELAPSED TIME		
TIME OF DAY		

----) SAME ELAPSED TIME APPLIES---]

----) SAME TIME OF DAY APPLIES----]

SAMPLE REMOVAL

TEMP(NEAREST 10 DEG.) ________
WIND(NEAREST 5 MPH) ________
WIND DIRECTION ________
SKY COVERAGE (%) ________
PRECIP. TYPE ________

SAMPLING STOP/REMOVAL DATE: ________ OPERATOR: ________

VOTA GAUGE READING________

FLOW ________ ________

ELAPSED TIME________ ---) SAME ELAPSED TIME APPLIES-]

TIME OF DAY ________ ---) SAME TIME OF DAY APPLIES--]

COMMENTS____

* For VOC numbering, the suffix "T" is added for Tenax and "TC" for Tenax/Charcoal.

Figure 4-3 Sample Data Sheet (12-Day)

Revised 03-05-90

EBASCO IRA-F AIR MONITORING
SAMPLING DATA SHEET

IRA-F SITE:____________

	SVOC	*VOC		HG	TSP	PM-10
Sample #	F__PU____0_	F__VC____0 (Tenax)	(T+C)	F__HG_____0_	F__TS_____0_	F__PM_____0_
MRI #						
Media #	N/A	(Tenax)	(T+C)			N/A

SAMPLE INSTALLATION   INSTALLATION DATE____________   OPERATOR____________

TEMP(NEAREST 10 DEG.)__________
WIND(NEAREST 5 MPH)__________
WIND DIRECTION__________
SKY COVERAGE (%)__________
PRECIP. TYPE__________

VOTA GAUGE READING__________   INSTALLATION FLOW CHECK

START FLOW ________ ________ ________ ________ ________
ELAPSED TIME________ ---) SAME ELAPSED TIME APPLIES-] ________ ________
TIME OF DAY ________ ---) SAME TIME OF DAY APPLIES--] ________ ________

FLOW CHECKS

	PM	AM	PM
TEMP(NEAREST 10 DEG.)			
WIND(NEAREST 5 MPH)			
WIND DIRECTION			
SKY COVERAGE (%)			
PRECIP. TYPE			

	PM	AM	PM		PM	AM	PM
FLOW CHECK DATE:				OPERATOR:			

VOTA GAUGE READING________ PM | ________ AM

	PM	AM	PM	AM	PM	AM	AM	PM	AM	PM
FLOW										
ELAPSED TIME			--) SAME ELAPSED TIME APPLIES---]							
TIME OF DAY			--) SAME TIME OF DAY APPLIES----]							

SAMPLE REMOVAL

	SVOC/VOC/HG	TSP/PM10
TEMP(NEAREST 10 DEG.)		
WIND(NEAREST 5 MPH)		
WIND DIRECTION		
SKY COVERAGE (%)		
PRECIP. TYPE		

SAMPLING STOP/REMOVAL DATE: SVOC VOC HG __________ TSP PM10__________ OPERATOR: __________ | __________

VOTA GAUGE READING__________   REMOVAL FLOW CHECK

FLOW ________ ________ ________ ________ ________
ELAPSED TIME________ ---) SAME ELAPSED TIME APPLIES-] ________ ________
TIME OF DAY ________ ---) SAME TIME OF DAY APPLIES--] ________ ________

ADDITIONAL COMMENTS: ____

* For VOC numbering, the suffix "T" is added for Tenax and "TC" for Tenax/Charcoal.

filter to determine which side of the filter exhibits a screen imprint. The filter should be installed with this screen imprint facing down.

3. Verify that the filter is centered on the frame, then replace the top half of the filter frame. Secure the hold down frame by tightening the two knurled brass nuts.

4. Place the prepared filter frame into a large Ziplock bag, being sure the cardboard pad is under the sealing gasket on the bottom of the cartridge.

Follow this same procedure for installation of quartz filters to be used in PM-10 sampling. Because these filters do not have printed filter numbers, it is important that the correctly marked cartridges be used for each filter/site.

4.4.1.2 <u>SVOC/OCP Preparation</u>

A combination of two types of filters are used for SVOC/OCP sampling. A quartz pre-filter is installed over the intake opening of the dual sampling module, and a PUF assembly, which is installed in the main cylinder of the module. The PUF assembly consists of a polyurethane foam trap enclosed in an open ended glass cylinder. Clean PUF assemblies, which have been shipped from MRI, are stored in glass storage/shipping jars each of which has an MRI bar-code and number affixed to it. The PUFs should be used in number sequence, if possible.

1. Separate the dual sampling module by unscrewing the two parts. Set aside the cylindrical portion.

2. Remove the cover plate, hold down frame and the thicker of the two teflon gaskets from the pre-filter end of the assembly. Leave the thin teflon gasket on top of the filter support screen.

3. Using stainless steel filter forceps, place a clean circular quartz fiber filter over the teflon gasket and support screen. Replace the second teflon gasket, hold down frame, and cover plate. Secure the cover plate by tightening the black plastic wingnuts. Note: The filters will have a screen imprint on one side, this is the side which should be placed face down in contact with the screen.

4. Set the pre-filter unit aside and return to the cylindrical PUF section.

5. Record the MRI bar-code number of the PUF on the sample data sheet.

6. Unpack the PUF filter, and carefully remove the tissue and foil wrappings. The tissue and foil will be reused when the samples are reclaimed.

7. Check to be sure there is a rubber gasket inside the exhaust end of the metal cylinder. Load the PUF filter, wire-mesh end down, into the sample module. The wire-mesh end of the PUF must be visible through the small orifice at the exhaust end of the cartridge.

8. Check that the rubber gasket which fits between the pre-filter and PUF portions of the module is in place. Then reassemble the two parts by screwing them together.

9. Return the tissue and foil wrapping to the same jar from which it came and replace the lid.

4.4.1.3 VOC Preparation

The Tenax (T) and Tenax plus charcoal (T+C) tubes are stored in metal tubes inside airtight metal cans. There are no MRI numbers on the T and T+C traps. There are, however, media numbers on the sides of the glass tubes. Set-up of the VOC sampling media requires the use of one Tenax and one Tenax plus charcoal tube for each sampler.

1. Record the media numbers on the data sheet.

2. Unscrew and remove the cap from the charcoal end of a T+C tube, and insert the tube into the brass elbow fitting. Cap the nipple on the brass fitting with a red plastic end cap.

3. Remove the other end cap from the T+C tube, and attach a Swagelok union to that end.

4. Unscrew one cap from the T tube and insert the tube into the open end of the Swagelok union. Hand tighten all nuts.

5. Wrap the glass tubes, and the Swagelock fitting between them, in foil, leaving the end cap exposed. The Tenax is photo-sensitive and the foil is used to protect the media from sunlight.

6. Finally, wrap the assembly in bubble wrap secured with tape, and label the wrapped assembly with the site number and date.

4.4.1.4 Mercury Preparation

Mercury tubes have only lot numbers for identification. Record the lot numbers on the data sheet. These tubes require no other preparation prior to installation.

4.4.2 Field Blanks

For each sample period a field blank of each media type is prepared. The sample preparation is identical to preparation of the active collection media. A complete data sheet is also prepared and the field blank site is always FC-2, and the sample number is designated as FC-2F.

4.4.3 Special Samples

For specific procedures on SVOC/OCP spiking samples, refer to Section 3.1.4, under the Quality Assurance heading.

4.5 Media Installation

4.5.1 Routine Samples

Sample media are transported to the field in clean, dry protective containers. All necessary data sheets must accompany the media on the installation visit.

4.5.1.1 TSP and PM-10 Installation

1. Upon arrival at the sample site, fill in the sampling start date, operator, and weather information.

2. Unlock and open the peaked cover at the top of the Hi-Vol sampler or the round, tiered top section of the PM-10 sampler.

3. Place the filter cartridge over the intake screen at the top of the sampler cabinet, and secure by tightening the four black wingnuts. Retighten the two knurled brass nuts on the filter cartridge if necessary.

4. Expose the filter by removing the snap cover from the top of the filter cartridge. Close and latch the top of the cabinet.

5. Set the automatic starter/timer to start the sampler at 0000 hours, and set the current time to the correct MST. The three black dials at the bottom of the timer should be set as follows: the "SAMPLE AFTER X DAYS" knob, set to 0 days; the "SAMPLE EVERY X DAYS" dial, set to any number greater than 1 day (e.g. 6 days); and the "SAMPLE FOR X HOURS" dial, set to 24 hours. Depress the reset toggle switch to activate the new settings.

6. After writing the site ID, the date, and operator's initials on the back of a Dickson recorder chart, install the chart on the Dickson flow recorder. Check the time (set to MST) indicated by the pointer, and the zero of the recorder pen position to be sure both settings are correct. The Dickson recorder is not connected to the power circuit through the motor, and will operate independently of the motor.

7. Record the start elapsed time from the digital elapsed time indicator meter.

8. Manually start the sampler by switching the toggle switch to "ON", and allow the sampler to warm up for about 5 minutes. Tap the Dickson recorder case lightly to be sure the recording pen is not stuck. Record the flow reading.

9. Once the flow has been recorded, return the toggle switch to the "TIMED" position. Close and latch the timer and Dickson recorder doors. Close and latch the sampler cabinet door.

4.5.1.2 <u>SVOC/OCP Installation</u>

1. Upon arrival at the sample site, fill in the sampling start date, operator, and weather information.

2. Unlatch and open the peaked cover at the top of the PS-1 sampler.

3. Lift the lock levers of the quick connect coupling, using the release rings, while inserting the small end of the dual sampling module into the coupling. Secure the module by pushing down firmly on the lock levers. Pull up gently on the module to be sure it is secure.

4. Uncover the quartz filter by loosening the three wingnuts and rotating the metal cover plate around one of the securing bolts until it extends away from the center of the filter. Slide the securing bolts back into their slots, and retighten all three wingnuts. Alternatively, the cover plate may be removed and placed on the bottom of the cabinet.

5. Close and secure the cover of the sampler.

4.5.1.3 VOC Installation

1. Upon arrival at the sample site, fill in the sampling start date, operator, and weather information.

2. Unlock and open the peaked cover at the top of the VOTA sampler.

3. Remove the red plastic cap from the nipple of the brass elbow of the VOC trap assembly, and remove the metal end cap from the intake of the Tenax tube.

4. Insert the nipple of the brass elbow into the plastic tubing of the VOTA sampler.

5. Secure the sampling assembly between padded edge of the sampler and the elastic tube attached to the cabinet. The end of the glass Tenax tube should protrude about 3 inches beyond the side of the sampler cabinet.

6. Do not close the sampler until the mercury sampling media has been installed.

4.5.1.4 Mercury Installation

1. Carefully break both tapered ends off a mercury sampling ampule. The holes drilled in the sides of the sampler cabinet may be used to break off the ends, or small wire cutters will serve well for this purpose. Note: Use caution to protect eyes from shattering glass.

2. Insert the media end of the ampule into the short rubber tube which extends downward from the cover of the VOTA sampler cabinet.

4.5.1.5 SVOC/OCP, VOC and Mercury Start-up Documentation

1. Before starting the PS-1 and VOTA samplers, record the starting elapsed time readings from the digital recorders inside the PS-1 cabinets. (These are continuous record timers and do not reset to zero.) Because the VOTA sampler is connected through the PS-1 power loop, the elapsed time for the VOTA sampler (VOC and mercury) and the PS-1 will be identical.

2. Start the samplers by moving the PS-1 toggle switch to "ON". The VOTA will also start.

3. Record the start time, in military format, and as MST (ie: 1214 MST).

4. Allow the samplers to run for about 5 minutes before reading the flow gauges. This allows the sampling apparatus to stabilize. The higher the ambient temperature, the shorter the required warm-up time.

5. Set the rotameter flows for VOC and mercury to match the values indicated on the label strips near their respective rotameters. Use the black knobs at the top of the rotameters for flow adjustment.

6. Record the appropriate flow meter reading(s) for each sampler (rotameter for VOTA and Magnehelic for PS-1). Close the cabinet doors, and secure the top of the VOTA cabinet.

4.5.2 Field Blanks - Installation Visit Exposure

Upon arrival at site FC-2 for media installation, expose the field blanks. Set out all field blank media on the equipment platform and uncover the TSP and SVOC/OCP filters, uncap both ends of the VOC sampling assembly, and break the ends off a mercury sampling ampule. Record the start time of field blank exposure and begin installation of the routine sample media at the site. Terminate field blank exposure once installation tasks are complete. Replace the TSP filter snap cover, replace the SVOC/OCP cover plate, cap both ends of the VOC sampling assembly, cap both ends of the mercury sampling ampule, and record the time when exposure ceased.

4.5.3 Special Samples

For specific procedures on SVOC/OCP spiking samples, refer to Section 3.1.4, under the Quality Assurance heading.

4.6 Mid-Sample Flow Checks

4.6.1 SVOC/OCP, VOC and Mercury Mid-Sample Flow Checks

Mid-sample flow checks are performed the evening following sample media installation and again the following morning.

1. Fill in all the ambient conditions information on the middle section of the data sheet.

2. Record the elapsed time, time of day and the respective flow indicator readings. Do not reset the flow of the VOC and mercury if the rotameters do not read at the target flow. The elapsed time for the PS-1 and VOTA samplers is identical since the two are linked.

3. Close and secure the door and top of the cabinet.

4.6.2 TSP and PM-10 Mid-Sample Flow Checks

The TSP and PM-10 flow checks occur the morning after the midnight start of the sampling period, and the evening before the midnight termination.

1. Fill in all the ambient conditions information on the middle section of the data sheet.

2. Record the elapsed time, time of day (MST) and the Dickson recorder or manometer flow indicator readings. (After August 24, 1989 all samplers were fitted with Dickson flow recorders. Tap the case of the Dickson recorder lightly before reading to be sure the pen is not stuck.

3. Close and secure the Dickson recorder and the door and top of the cabinet.

4.6.3 Field Blanks

No field blank exposure is necessary during the mid-sample flow checks.

4.6.4 Special Samples

For specific procedures on SVOC/OCP spiking samples, refer to Section 3.1.4, under the Quality Assurance heading. Flow checks should be performed using the same procedure as for routine samples of this type. (See Section 4.6.1.)

4.7 Sample Recovery

4.7.1 Routine Samples

Samples are transported from the field sites to the sample preparation area in clean, dry protective containers.

4.7.1.1 SVOC/OCP, VOC and Mercury Sample Recovery

The SVOC/OCP, VOC and mercury samples are collected around noon the day following installation.

1. Record the pertinent information, such as date, operator and weather conditions on the data sheet before beginning each sample recovery.

2. Before turning off the PS-1 and VOTA samplers, open the cabinets, and record the as-found readings of the flow indicator gauges. Take these readings with all samplers at the site running, since shutting down one set of samplers reduces the electrical load and increases the speed of the remaining samplers, thereby changing the flow rates, and consequently the as-found readings.

3. Shut off the samplers by moving the toggle switch inside the PS-1 timer box to the "OFF" position. Do not turn off the TSP and PM-10 samplers at the site if they are still running. They will turn off automatically at midnight. (TSP and PM-10 samplers have chart recorders which record flow fluctuations during the sample run.)

4. Record the ending elapsed time reading from the digital timer readout, and record the actual stop time in Mountain Standard Time (military format).

5. Open the top of the PS-1 cabinet, replace and secure the cover plate over the intake end of the dual sampling module, then release the module by lifting up on the rings on the two lock levers. Lift the dual sampling module free. Close and secure the top of the PS-1 cabinet.

6. Open the top of the VOC cabinet. Cap the open glass end of the VOC sampling assembly with a metal Swagelok cap, then carefully remove the brass nipple from the tubing. Cap the nipple with a red plastic cap.

7. Remove the mercury sampling ampule from the tubing, and cap both ends of the glass tube with red plastic caps. Place the ampule in a clearly marked Ziplock bag bearing the site identification. It is imperative that the ampule be deposited in the correct bag because there are no distinctive marks on individual ampules.

8. Close and secure the cabinet door and top.

4.7.1.2 TSP and PM-10 Sample Recovery

The TSP and PM-10 samplers run twenty-four hours and turn off automatically at midnight the day before they are to be collected. These samplers will not be running when the operator arrives to collect the samples.

1. Open the TSP or PM-10 cabinet and manually switch the sampler on. Allow the samplers to warm up for about 5 minutes before recording

flows. If more than one sampler draws power from a circuit, all samplers on the circuit must be turned on.

2. Open the door of the Dickson recorder and tap lightly on the case of the recorder before reading, to be sure the pen is not stuck. Record the indicated flow reading.

3. Switch the sampler off before removing the chart from the Dickson recorder. Leave the recording pen slightly elevated to prevent contact with the chart backing plate. Close and latch the Dickson recorder cover.

4. Open the top of the sampler cabinet and cover the exposed filter and filter frame with the snap cover.

5. Loosen the wingnuts on the hold-down bolts, and remove the complete filter frame. Place the filter cartridge in a large Ziplock bag.

6. Close and secure the top of the TSP or PM-10 cabinet.

4.7.1.3 Field Blanks - Recovery Visit Exposure

The field blanks may be exposed when the operator returns to FC-2 for media recovery, 24 hours after installation. Exposure should be carried out following the same procedures discussed in Section 4.5.1.6. The Start and end times for the second exposure must be recorded on the data sheet. Recovery visit exposures are optional.

4.7.2 Special Samples

For specific procedures on SVOC/OCP spiking samples, refer to Section 3.1.4, under the Quality Assurance heading. Spiking samples should be recovered following the same procedures as discussed for routine samples, (see Section 4.7.1.1).

4.8 Reclamation of Exposed Sample Media

4.8.1 Routine Samples

Always use clean cotton gloves when handling any media, and use only the filter forceps for handling the TSP, PM-10, and SVOC/OCP filters. The following reclamation procedures were developed to allow preparation of exposed media for transportation and analysis while minimizing the possibility of inadvertent contamination. To prevent any possible contamination of the exposed filters during handling, these procedures must be strictly adhered to. The sample reclamation area must be kept free of potential contaminants including food, smoke, fragrances and/or volatiles of any kind.

4.8.1.1 TSP and PM-10 Reclamation

1. Remove the filter frame containing the exposed media from the plastic bag in which it was transported from the field.

2. Unscrew the two knurled brass nuts from the hold-down bolts of the filter frame and remove the hold-down frame.

3. Using stainless steel forceps, fold the filter in half, perpendicular to the long edge, with the soiled side facing in. Care must be taken to avoid damaging the filter or losing any pieces of it. If a fragment is torn loose, it must be folded into the

filter, and notation made of the incident. The exposed filter should be handled as little as possible.

4. Retrieve the glassine envelope from the folder in which the filter was originally shipped. Before inserting the filter into the envelope, verify that all numbers correspond to those recorded on the data sheet.

5. Using filter forceps, slide the filter into the glassine envelope, folded edge down, to prevent loss of collected material during shipping. Fold the open end of the glassine envelope over, and seal it with an MRI bar- code sticker bearing the correct number for the filter. Replace the glassine envelope in the appropriate folder, and store the folder in a Ziplock bag.

4.8.1.2 <u>SVOC/OCP Reclamation</u>

1. Retrieve the correctly numbered glass jar, with packing materials, in which a given PUF assembly was shipped. To ensure that the sample is returned to the proper jar, verify that the MRI bar-code number and site ID correspond.

2. Remove the glass and foam PUF assembly from the dual sampling module, and roll the original wrapping foil around the glass sleeve. Fold the foil over only the screen end of the filter.

3. Remove the pre-filter cover plate, hold down ring and the thicker (top) teflon gasket to allow access to the quartz pre-filter. Using stainless steel forceps, fold the filter into quarters, soiled side in. Place the folded filter on the foam plug at the open end of the foil-wrapped PUF assembly. Close the foil over the open end of the PUF assembly.

4. Pack the foil wrapped PUF into the MRI jar, using the Kimwipe padding and the foil seal under the lid, if foil was originally included with the sample media.

5. Store the jar containing the exposed media in the refrigerator until shipping. This is done to ensure that the trapped analyte does not volatilize before analysis. Note: Shelf life after media exposure is extremely limited, so shipping must be accomplished as soon as possible.

4.8.1.3 <u>VOC Reclamation</u>

1. Assign MRI bar-code numbers to the T and T+C tubes. One bar-code number should be assigned to each tube from the bar-code sticker sheets supplied by MRI. Preparation of the bar-code tags, which will be attached to the media tubes, can be done in advance of sample recovery. Record the selected code on the sample data sheet, and affix a sticker with that code number to a manila tag. Slide a 12 inch tag wire through the eye of the tag and twist a few turns to secure the wire to the tag. Follow this procedure for all T and T+C tube sets used.

2. Unwrap the bubble wrap and foil from the T and T+C tubes, and remove the tubes from the Swagelok fittings.

3. Cap the ends of both glass tubes. Process all sample tubes in this fashion before continuing with the next step.

4. MRI bar-code numbers must be attached to each T and T+C tube. Verify that the bar-code number and the tube number correspond to those recorded for a given sampler ID. These numbers are also listed on the COC form. Wind the tag wire around an end cap of the correctly numbered T or T+C tube. Do not touch the glass tubes with bare hands at any time.

5. Insert the tagged T and T+C tubes into the metal tubes inside the metal shipping can. If the shipping cans will not accommodate all the VOC tubes, the remaining tubes are to be shipped in a glass jar provided by MRI specifically for this purpose. Place the tubes inside the provided metal tubes, and wrapped these in Kimwipes for protection. No bubble wrap or styrofoam can be used inside the jar due to the potential for contamination. Place a packet of desiccant inside the shipping container before sealing.

6. Store the reclaimed VOC traps in the refrigerator until final packing for shipping. Store the bubble wrap and foil until the next sampling period.

4.8.1.4 Mercury Reclamation

Aside from tagging with bar-code numbers, and refrigeration until shipping, mercury sample ampules need no special reclamation handling. MRI bar-code tags must be attached to the mercury ampules immediately upon their removal from the plastic bags in which they were transported from the field. The only identifying numbers on the ampules are lot numbers, so ampules must not be mixed.

1. Assign MRI bar-code numbers to the mercury ampules. One bar-code number should be assigned to each tube from the bar-code sticker sheets supplied by MRI. Preparation of the bar-code tags, which will be affixed to the media tubes, can be done in advance of sample recovery. Record the selected bar-code number on the sample data sheet, and affix a sticker with that code number to a manila tag. Slide a 12 inch tag wire through the eye of the tag and twist a few turns to secure the wire to the tag. Follow this procedure for all ampules used.

2. An MRI bar-code number must be attached to each mercury ampule. Verify that the bar-code number corresponds to the one assigned to the sampler ID. These numbers are also listed on the COC form. Bend the free ends of the tag wire around the opposite ends of the tubes, and wrap tape around the red cap to hold the free ends close to the tubes.

4.8.2 Special Samples

For specific procedures on SVOC/OCP spiking samples, refer to Section 3.1.4, under the Quality Assurance heading. Spiking samples should be reclaimed following the same procedures as discussed for routine samples, (see Section 4.8.1.2).

5.0 SAMPLE SHIPPING

5.1 Holding Time Limitations/Shipping Address

The various sample types have different holding time tolerances before analysis of the collected sample must be completed. The PUF traps used in SVOC/OCP sampling must undergo extraction by the laboratory within seven days from the time of recovery from the sampling apparatus. Shipment to the laboratory must be accomplished as soon as possible following recovery and reclamation. Example: If a sample is set out on a Monday and recovered on Tuesday, the extraction for analysis must be completed no later than the following Tuesday. The shipping time must be arranged to take into account such delays as weekends and holidays. Federal Express takes 24 hours to deliver samples to the destination laboratory. Holding times for the other exposed media types are less critical. The required time from recovery to extraction is fourteen days for VOC tubes, twenty-eight days for mercury ampules. TSP, PM-10 and metals filters may be shelved for up to six months before analysis. Shipping duration must also be taken into account when shipping because most samples must be shipped on ice. If samples are shipped before a weekend, someone must be at the laboratory to receive the samples on the weekend. The season and shipping duration will influence how much ice must accompany the sample.

An example Federal Express Airbill is illustrated in Figure 5-1. Because the SVOC/OCP and VOC samples must be kept cool during shipping, they should not remain in transit longer than 24 hours. These samples should be shipped only on Monday through Thursday, so that they may be retrieved and properly stored at the laboratory. During holiday periods, call the laboratory prior to shipment to ensure that there will be personnel available to handle the shipment.

Samples are to be shipped to:

Brad Deck c/o
MRI
425 Volker Blvd.
Kansas City, MO 64110
Tel. (816) 753-7600

5.2 Chain-of-Custody

The chain-of-custody is the documentation which accompanies the samples to the laboratory. This form documents by whom the samples are handled from the time of reclamation until shipping. The evidence tape with which the shipping container is sealed, ensures that the person who turns the cooler over to the shipping company is the last person to actually handle the samples until they are unpacked at the laboratory.

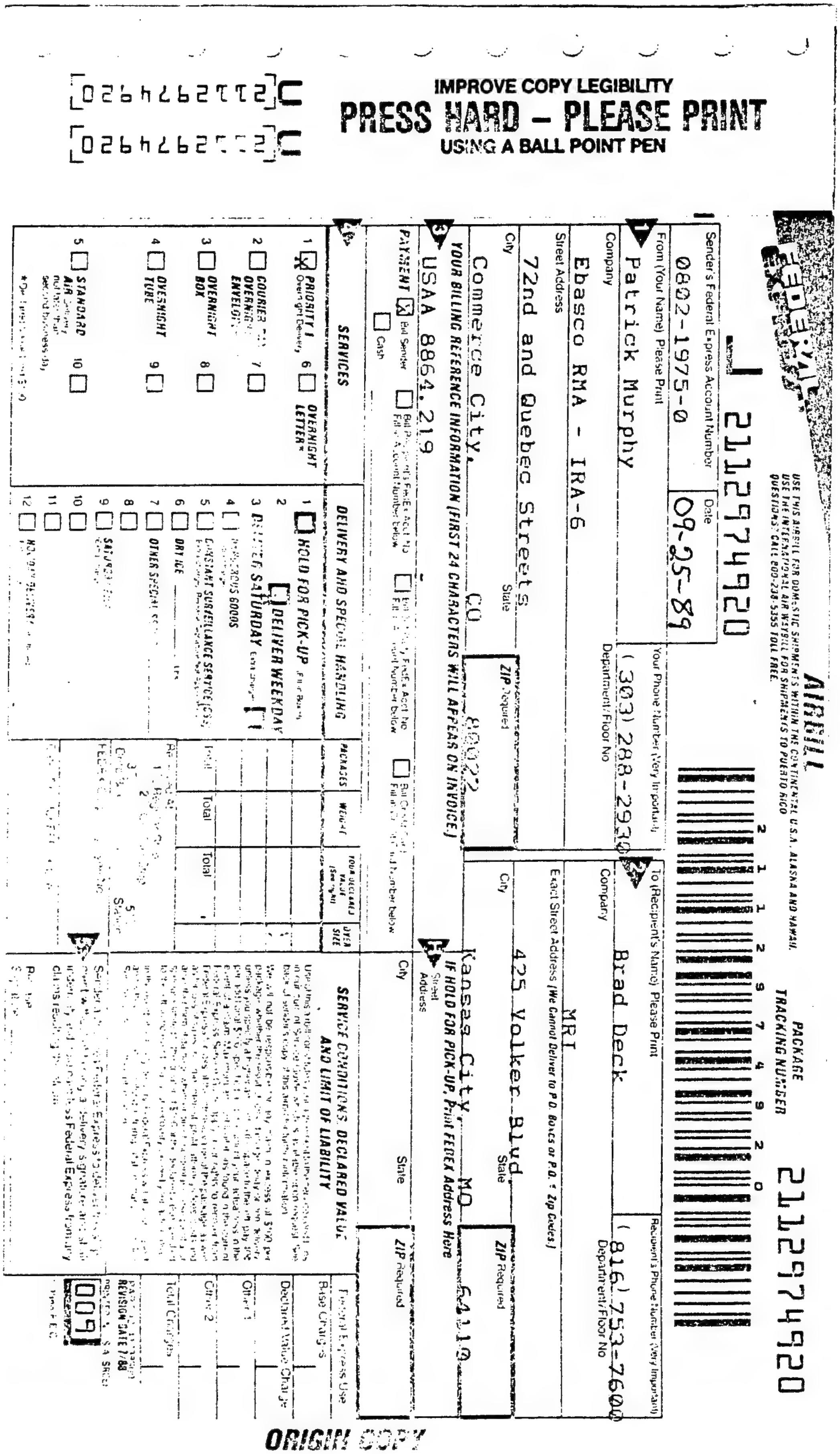
5.2.1 Printing Chain-of-Custody (COC)

The MRI bar-code numbers for each sample must be recorded on the appropriate chain-of-custody (COC) form(s) which will accompany the sample shipment. Blank COC form templates are stored on the IRA-F computer in the FORMTOOL directory. To print out the required form, follow the procedures outlined below:

1. Type "FORM" to enter the FORMTOOL directory.

2. Press the F2 key to call up a menu, press the F3 key (change directory), and then type \COC to enter the COC form directory.

Figure 5-1 Federal Express Airbill


IMPROVE COPY LEGIBILITY
PRESS HARD – PLEASE PRINT
USING A BALL POINT PEN

AIRBILL

USE THIS AIRBILL FOR DOMESTIC SHIPMENTS WITHIN THE CONTINENTAL U.S.A., ALASKA AND HAWAII.
USE THE INTERNATIONAL AIR WAYBILL FOR SHIPMENTS TO PUERTO RICO.
QUESTIONS? CALL 800-238-5355 TOLL FREE.

PACKAGE TRACKING NUMBER 2112974920

Sender's Federal Express Account Number: 0802-1975-0
Date: 09-25-89

From (Your Name) Please Print: Patrick Murphy
Your Phone Number (Very Important): (303) 288-2930
Company: Ebasco RMA - IRA-6
Department/Floor No.
Street Address: 72nd and Quebec Streets
City: Commerce City
State: CO
ZIP Required: 80022

YOUR BILLING REFERENCE INFORMATION (FIRST 24 CHARACTERS WILL APPEAR ON INVOICE.)
USAA 8864.219

PAYMENT: [X] Bill Sender [ ] Bill Recipient's FedEx Acct No. [ ] Bill 3rd Party FedEx Acct No. [ ] Bill Credit Card [ ] Cash

To (Recipient's Name) Please Print: Brad Deck
Recipient's Phone Number (Very Important): (816) 753-7600
Company: MRI
Department/Floor No.
Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. ZIP Codes.): 425 Volker Blvd.
City: Kansas City
State: MO
ZIP Required: 64110

IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City
State
ZIP Required

SERVICES
1 [X] PRIORITY 1 Overnight Delivery
6 [ ] OVERNIGHT LETTER*
2 [ ] COURIER-PAK OVERNIGHT ENVELOPE*
7 [ ]
3 [ ] OVERNIGHT BOX
8 [ ]
4 [ ] OVERNIGHT TUBE
9 [ ]
5 [ ] STANDARD AIR
10 [ ]

DELIVERY AND SPECIAL HANDLING
1 [ ] HOLD FOR PICK-UP
2 [ ] DELIVER WEEKDAY
3 [ ] DELIVER SATURDAY
4 [ ] DANGEROUS GOODS
5 [ ] CONSTANT SURVEILLANCE SERVICE (CSS)
6 [ ] DRY ICE
7 [ ] OTHER SPECIAL SERVICE
8 [ ]
9 [ ] SATURDAY PICK-UP
10 [ ]
11 [ ]
12 [ ] HOLIDAY DELIVERY

PACKAGES | WEIGHT | YOUR DECLARED VALUE | OVER SIZE
Total | Total | Total

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

Federal Express Use
Base Charges
Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 7/88

009

ORIGIN COPY

3. Select the required COC form. There are four COC forms: IRA1, which is page one for SVOC/OCP, VOC and mercury samples on days when there is a duplicate sample, IRA1S, which is page one for SVOC/OCP, VOC, and mercury when a duplicate is not taken, IRA2, which is page two for SVOC/OCP, VOC and mercury, and IRA3, which is used for the TSP and PM-10 samples. Figure 5-2 presents illustrations of these COC forms.

4. Type the appropriate file name and press the ENTER key. The template form will appear on the computer screen.

5. Press the CTRL and the F1 keys simultaneously, and when the prompt "Enter Form Name or [Enter] for: ______" appears at the bottom of the screen, enter the new name for the COC as "IRAmmddt", where mm represents month, dd represents day, and t represents the last character in the template name (e.g. 1,S,2,3). The mmdd field should use the completion date of the samples. Renaming the form template prevents overwriting and destroying the blank template resident on disk.

6. The Site ID is already filled in on the template, but the MRI number, the filter media number, and collection time must be entered from the data forms. The airbill number and sample completion date must be entered in the lower right hand corner of the chain-of-custody. The sample type, sample technique and required analysis are already entered. The Sample Technique is identified as a "P" for all samples except field blanks and trip blanks, which are identified with a "9".

7. When the form is complete, press the CTRL and F1 keys simultaneously then press the ENTER key to save the file.

8. To print the form, load a single sheet of paper into the printer, wide edge first (11" x 8 1/2") . Pull the bail away from the platen to cause the printer to advance the paper. Place the bail back against the platen.

9. Press the CTRL and F7 keys simultaneously to select the print option. Press the F9 key to select "No Sideways (Portrait)" printing, wait for the printer port initialization to end, and then press the F1 key. Press ENTER twice to initiate printing of one copy. Press the ESC key to terminate FORMTOOL operations, Y to save the filled-out form, and Y to exit FORMTOOL.

10. Carefully check the printout to be sure all information is correct.

Copies of the COC should be used to inventory the samples as they are placed into the shipping coolers. If there are any corrections, they can be entered into the computer and a new copy of the COC produced. When the COC has been checked and is found to be correct, cross out any empty lines on the form. A large X may be used to cross out areas at the bottom of the sample list, but a single horizontal line is used for deletions within the body of the sample list. Each crossed out area must be initialed and dated. Fill in the date/time blank by hand, and enter "Federal Express" in and the "Received by:" blank. Make three photocopies of the COC, then placed the signed originals in a plastic bag, and tape the bag inside the lid of the shipping cooler. One copy of the COC is sent to the QC officer, one copy is filed in the IRA-F files at RMA, and one copy is submitted to the project manager as part of the weekly report.

Figure 5-2 Chain-of-Custody Form

(IRA3)

ROCKY MOUNTAIN ARSENAL - IRA-6
EBASCO SERVICES, INC.
72nd and Quebec Streets
Commerce City, Colorado 80022 (303)288-2930(4)

CHAIN OF CUSTODY
AIR QUALITY SAMPLES
USAA 8864.361

TO: MRI (Brad Deck)
425 Volker Blvd.
Kansas City, MO 64110
(816)753-7600

					SAMPLE TYPE						ANALYSIS REQUIRED							
Site ID.	MRI #	Filter Media Number	Ebasco Sample Number	Time Coll'd	PUF OCP-SVOC	Hg	VOC	TSP	PM10	Sample Tech.	SVOC PUF	OCP PUF	Hg	VOC	TSP	PM10	ICAP METALS	As
FC1	18770	5552001	F1TS11189	1103MST				X		P					X		X	X
FC1	21930	N/A	F1PM11189	1103MST					X	P						X		
FC2	18771	5562600	F2TS11189	1117MST				X		P					X		X	X
FC2D	18772	5562599	F2TS11189D	1117MST				X		P					X		X	X
FC3	18773	5562598	F3TS11189	0824MST				X		P					X		X	X
FC3	21931	N/A	F3PM11189	0824MST					X	P						X		
FC4	18774	5562597	F4TS11189	1021MST				X		P					X		X	X
FC5	18775	5562596	F5TS11189	1109MST				X		P					X		X	X
FC2F	18776	5562595	F2TS11189F	1121MST				X		9					X		X	X

MAC 11-20-89

Relinquished by: (Signature)	Date/Time	Received by: (Sign.)	Relinquished by: (Sign.)	Date/Time	Received by: (Sign.)
Mild A. [illegible]	112089/1200	Federal Express			
Relinquished by: (Signature)	Date/Time	Received by: (Sign.)	AIRBILL NUMBER: 2724618470		SITE TYPE: ARMO
			SAMPLE COMPLETION DATE: 11-18-89		

Figure 5-2 Chain-of-Custody Form (Cont.)
(IRA1)

ROCKY MOUNTAIN ARSENAL - IRA-6
EBASCO SERVICES, INC.
72nd and Quebec Streets
Commerce City, Colorado 80022 (303)288-2930(4)

CHAIN OF CUSTODY
AIR QUALITY SAMPLES
USAA 8864.361

(816)753-7600 TO: MRI (Brad Deck)
425 Volker Blvd.
Kansas City, MO 64110

Site ID.	MRI #	Filter Media Number	Ebasco Sample Number	Time Coll'd	SAMPLE TYPE					Sample Tech.	ANALYSIS REQUIRED							
					PUF OCP/ SVOC	Hg	VOC	TSP	PM10		SVOC PUF	OCP PUF	Hg	VOC	TSP	PM10	ICAP METALS	As
FC1	22360	N/A	F1PU11189	1333MST	X					P	X	X						
FC1	23559	511	F1HG11189	1333MST		X				P			X					
FC1	23560	183	F1VC11189T	1333MST			X			P				X				
FC1	23561	647	F1VC11189TC	1333MST			X			P				X				
FC2	22361	N/A	F2PU11189	1347MST	X					P	X	X						
FC2	23562	511	F2HG11189	1347MST		X				P			X					
FC2	23563	758	F2VC11189T	1347MST			X			P				X				
FC2	23564	1900	F2VC11189TC	1347MST			X			P				X				
FC2D	22362	N/A	F2PU11189D	1347MST	X					P	X	X						
FC2D	23565	511	F2HG11189D	1347MST		X				P			X					
FC2D	23566	1876	F2VC11189TD	1347MST			X			P				X				
FC2D	23567	829	F2VC11189TCD	1347MST			X			P				X				
FC3	22363	N/A	F3PU11189	1317MST	X					P	X	X						
FC3	23568	511	F3HG11189	1317MST		X				P			X					
FC3	23569	1619	F3VC11189T	1317MST			X			P				X				
FC3	23570	876	F3VC11189TC	1317MST			X			P				X				
FC4	22364	N/A	F4PU11189	1324MST	X					P	X	X						
FC4	23571	511	F4HG11189	1324MST		X				P			X					
FC4	23572	1631	F4VC11189T	1324MST			X			P				X				
FC4	23573	1553	F4VC11189TC	1324MST			X			P				X				

Relinquished by: (Signature)	Date/Time	Received by: (Sign.)	Relinquished by: (Sign.)	Date/Time	Received by: (Sign.)
Mitchell A. [illegible]	112089/1250	Federal Express			
Relinquished by: (Signature)	Date/Time	Received by: (Sign.)	AIRBILL NUMBER: 2724618470		SITE TYPE: ARMO
			SAMPLE COMPLETION DATE: 11-18-89		

Figure 5-2 Chain-of-Custody Form (Cont.)

(IRA2)

ROCKY MOUNTAIN ARSENAL - IRA-6
EBASCO SERVICES, INC.
72nd and Quebec Streets
Commerce City, Colorado 80022 (303)288-2930(4)

CHAIN OF CUSTODY
AIR QUALITY SAMPLES
USAA 8864.361

TO: MRI (Brad Deck)
425 Volker Blvd.
Kansas City, MO 64110
(816)753-7600

Site ID.	MRI #	Filter Media Number	Ebasco Sample Number	Time Coll'd	SAMPLE TYPE: PUF OCP-SVOC	Hg	VOC	TSP	PM10	Sample Tech.	ANALYSIS REQUIRED: SVOC PUF	OCP PUF	Hg	VOC	TSP	PM10	ICAP METALS	As
FC5	22365	N/A	F5PU11189	1338MST	X					P	X	X						
FC5	23574	511	F5HG11189	1338MST		X				P			X					
FC5	23575	1760	F5VC11189T	1338MST			X			P				X				
FC5	23576	1694	F5VC11189TC	1338MST			X			P				X				
FC2F	22366	N/A	F2PU11189F	1353MST	X					9	X	X						
FC2F	23577	511	F2HG11189F	1353MST		X				9			X					
FC2F	23578	1616	F2VC11189TF	1353MST			X			9				X				
FC2F	23579	743	F2VC11189TCF	1353MST			X			9				X				

MAC 11-20-89

Relinquished by: (Signature) Michael A. [illegible]	Date/Time 112089/1200	Received by: (Sign.) Federal Express	Relinquished by: (Sign.)	Date/Time	Received by: (Sign.)
Relinquished by: (Signature)	Date/Time	Received by: (Sign.)	AIRBILL NUMBER: 2724619470		SITE TYPE: ARMO
			SAMPLE COMPLETION DATE: 11-18-89		

Figure 5-2 Chain-of-Custody Form (Cont.)

(IRA1S)

ROCKY MOUNTAIN ARSENAL - IRA-6
EBASCO SERVICES, INC.
72nd and Quebec Streets
Commerce City, Colorado 80022 (303)288-2930(4)

CHAIN OF CUSTODY
AIR QUALITY SAMPLES
USAA 8264.361

TO: MRI (Brad Deck)
425 Volker Blvd.
Kansas City, MO 64110
(816)753-7600

Site ID.	[illegible]	Filter Media Number	Ebasco Sample Number	Time Coll'd	SAMPLE TYPE: PUF OCP/SVOC	J	VOC	TSP	Pm	Sample Tech.	ANALYSIS REQUIRED: SVOC PUF	OCP PUF	Hg	VOC	TSP	PM10	ICAP METALS	As
FC1	22255	N/A	F1PU09019	1219MST	X					P	X	X						
FC1	23351	179	F1VC09019T	1219MST			X			P				X				
FC1	23352	374	F1VC09019TC	1219MST			X			P				X				
FC2	22256	N/A	F2PU09019	1234MST	X					P	X	X						
FC2	23353	824	F2VC09019T	1234MST			X			P				X				
FC2	23354	558	F2VC09019TC	1234MST			X			P				X				
FC3	22257	N/A	F3PU09019	1200MST	X					P	X	X						
FC3	23355	883	F3VC09019T	1200MST			X			P				X				
FC3	23356	1355	F3VC09019TC	1200MST			X			P				X				
FC4	22258	N/A	F4PU09019	1207MST	X					P	X	X						
FC4	23357	552	F4VC09019T	1207MST			X			P				X				
FC4	23358	189	F4VC09019TC	1207MST			X			P				X				
FC5	22259	N/A	F5PU09019	1225MST	X					P	X	X						
FC5	23359	973	F5VC09019T	1225MST			X			P				X				
FC5	23360	951	F5VC09019TC	1225MST			X			P				X				
FC2F	22260	N/A	F2PU09019F	1240MST	X					9	X	X						
FC2F	23361	629	F2VC09019TF	1240MST			X			9				X				
FC2F	23362	844	F2VC09019TCF	1240MST			X			9				X				

MAC 090589

Relinquished by: (Signature)	Date/Time	Received by: (Sign.)	Relinquished by: (Sign.)	Date/Time	Received by: (Sign.)
Mich A. Campo	090589/1000	Federal Express			
Relinquished by: (Signature)	Date/Time	Received by: (Sign.)	AIRBILL NUMBER: 2112974986		SITE TYPE: ARMO
			SAMPLE COMPLETION DATE: 09-01-89		

5.3 Sample Packing/Shipping

5.3.1 Routine Samples

Assemble the appropriate chain-of-custody forms for the samples to be shipped. Use copies of the COC forms as a check-off list to verify that numbers and quantities correspond. The TSP and PM-10 filters are always shipped separately from the SVOC/OCP, VOC and mercury samples. The TSP and PM-10 filters cannot be packed with Blue Ice which can cause condensation on the filters.

5.3.1.1 TSP/PM-10 Sample Packing

1. Place all the file folders containing the filters together, folded edge down, into a Ziplock bag.

2. Place the Ziplock bag vertically, with the folds of the filter folders at the bottom, in a small cooler and add packing to prevent movement.

3. Make three copies of the chain-of-custody(s), place the original inside a Ziplock bag, then tape the bag inside the lid of the container. Tape the lid closed with strapping tape.

4. Place 4 strips of evidence tape across the cooler lid seam, then sign and date the evidence tape.

5.3.1.2 SVOC/OCP Sample Packing

1. Line the bottom of a cooler with two layers of bubble wrap.

2. Remove the MRI jars containing the PUF sampling media from the refrigerator, and wrap each jar in bubble wrap.

3. Place the wrapped jars upright in the cooler, and pack bubble wrap between the jars to further protect them and prevent jostling during shipping.

4. Make three copies of the chain-of-custody(s), place the original inside a Ziplock bag, then tape the bag inside the lid of the container. Tape the lid closed with strapping tape.

5. Place a sufficient amount of Blue Ice (2 to 4 pieces depending on the cooler size and season) in the top of the cooler to preserve the samples during shipment and insert additional packing material if required. With the lid closed, nothing should move when the cooler is shaken. Tape the lid closed with strapping tape.

6. Place 4 strips of evidence tape across the cooler lid seam, then sign and date the evidence tape.

5.3.1.3 VOC Sample Packing

1. Line the bottom of a cooler with two layers of bubble wrap.

2. Remove the shipping can, containing the exposed VOC traps, from the refrigerator and place it in the shipping cooler.

3. Pack bubble wrap or other packing material around the shipping can to protect the contents and limit jostling during shipment. If mercury samples are to accompany the VOC samples, allow room for these, and proceed with preparation of the mercury ampules for shipping, otherwise, continue with the following steps.

4. Make three copies of the chain-of-custody(s), place the original inside a Ziplock bag, then tape the bag inside the lid of the container. Tape the lid closed with strapping tape.

5. Place a sufficient amount of Blue Ice (2 to 4 pieces depending on cooler size and season) in the top of the cooler to preserve the samples during shipment and insert additional packing material if required. With the lid closed, nothing should move when the cooler is shaken. Tape the lid closed with strapping tape.

6. Place 4 strips of evidence tape across the cooler lid seam, then sign and date the evidence tape.

5.3.1.4 Mercury Sample Packing

1. Verify that all tubes have manila tags with MRI bar-code numbers attached. Roll the tubes in bubble wrap so that they are not in contact with each other, and place the package in a Ziplock bag. Carefully pack the Ziplock bag into the cooler containing the VOC shipping can.

2. Proceed with steps 4 through 6 of Section 5.3.1.3.

5.3.1.5 Final Shipping Preparation

Obtain a pre-printed Federal Express Airbill from the file cabinet folder. Fill in the date and attach it to the top of the cooler. If Federal Express is picking up the shipment on-site, then weigh the cooler and note this weight on the Airbill. Federal Express visits the Stollar base trailer at the South Plant contractor trailer park on a daily. If the samples are not ready for shipment in time for on-site pickup, or if the Federal Express truck does not stop at the Stollar trailer, then the samples must be delivered to the Federal Express shipping office. The nearest location is about one mile south of the RMA boundary at the intersection of 49th Ave. and Paris street, which is a few blocks west of Peoria street on 49th Ave.

5.3.2 Special Samples

Special samples are be prepared for shipping following procedures identical to routine samples of the same type. A cover letter with special information or instructions may be included with the COC when these samples are shipped.

5.4 Document Filing/Disposition

In addition to the COC documents discussed above, other documents dealing with IRA-f activities must be copied, distributed and filed. One copy of each data sheet is made and sent to the project manager, while the originals are filed in the IRA-F field trailer files. Federal Express original receipts are attached to the COC copy in the field file, and copies of the receipts are attached to the COC copies sent to the QA supervisor or assistant.

To verify that the shipment arrives at MRI with the proper contents in good condition, a FAX, Figure 5-1, is sent to Brad Deck at MRI and Doris Hernandez at Ebasco/Lakewood on the morning following shipment. The FAX lists the

general contents of the cooler, the date of shipment and the Federal Express airbill number. This FAX also notifies Mr. Deck that he should contact Doris Hernandez by FAX to inform her that the shipment has been received and to note any problem which may exist. The Fax must have a document control number in the upper right corner. This number can be obtained from a reserve list in the IRA-F files or directly from Linda Hicks. Copies of the Fax are distributed to J.D. Smith, P. Silva, D. Campbell, E. Yould, P. Chiaro, DCC/Denver and Chron File. If a cover letter is sent with a shipment, it receives a document control number and copies are sent to those listed above. Copies of any correspondence are filed in the IRA-F field file.

Each week an activity report is submitted to the project manager, summarizing the total project hours for each employee, expenses incurred, the sites and media sampled, samples shipped for analysis, and any problems or important events. This document is also assigned a document control number, and copies are distributed to the IRA-F file, P. Chiaro, E. Yould, DCC/Denver, and Chron File. Attached to the report are copies of the data sheets, chain-of-custody forms, and original expense receipts. Copies of the expense receipts are maintained at the IRA-F trailer in an invoice log book. All packing slips for received shipments are filed in the appropriate IRA-F file folders.

Figure 5-3 Fax to MRI Laboratories

EBASCO SERVICES INCORPORATED EBASCO

143 Union Boulevard, Suite 1010, Lakewood, CO 80228-1824, (303) 988-2202

REF: IRA6-EDEN-MRI-M-018

October 10, 1989

Karl Huston
Rocky Mountain Arsenal IRA-6
Ebasco Services, Inc.
72nd and Quebec Streets
Commerce City, Colorado 80022
(303)288-2934

Brad Deck
Midwest Research Institute
425 Volker Blvd.
Kansas City, Missouri 64110
FAX# (816) 753-8420

Brad,

This letter is to notify you that 1 cooler was shipped to you on Monday, 10-09-89 with the following contents:

6 PUF samples

6 VOC pairs

The FedEx airbill number is 2112974861. Please notify Doris Hernandez by FAX (303-980-3539) when the shipment arrives, what the condition of the samples is, and if any deficiencies, errors or questions arise related to the chain of custody or the above listed contents. Thanks for your help.

Sincerely,

Karl Huston

cc: Doris Hernandez
J.D. Smith
P. Silva
D. Campbell
E. Yould
P. Chiaro
DCC/Denver
Chron File

6.0 MAINTAINING ADEQUATE SAMPLE MEDIA INVENTORY

Thirteen sets of media are required for a 6 and 12 day sampling cycle. The unexposed PUF assemblies and VOC tubes have a shelf life of 30 days. This shelf life commences the day the media are prepared at the MRI laboratories. All the other types of media may be stored almost indefinitely. MRI furnishes PUF assemblies and T and T+C tubes directly to IRA-F, but IRA-F originally obtained TSP and PM-10 filter media indirectly from MRI through CMP. Initially the IRA-F program received 100 TSP filters at a time, restocking when the supply fell to about one week's supply. After August 15, 1989 IRA-F received filters directly from MRI. The mercury tubes are obtained locally from a laboratory supply house:

Scientific Industries, Inc.
2207 Bluebell Avenue
Boulder, CO 80302
(303) 443-7087

MRI ships PUF assemblies and VOC tubes periodically to maintain the IRA-F inventory. The goal is to have no less media than is required for two sample periods, but also not to have such a large stock that the media shelf life expires before use. Each week the field task leader or designate reviews the inventory and ensures that an adequate supply is available for the upcoming two week period. Media received from MRI is logged-in, in a separate log book, to document the number, condition and MRI bar-codes or media numbers. In addition the initial preparation date and expiration date are noted in the log book. This was initiated September 15, 1989.

7.0 CALIBRATION OF SAMPLING EQUIPMENT

The TSP, PM-10 and PS-1 samplers use an EPA calibrated orifice as a transfer standard for calibration. The orifice was calibrated using a roots meter. The EPA provided a table showing the calibration manometer reading versus the flow at STP (Qr). The VOTA samplers are calibrated with a Sierra Mass Flow meter which gives readings in terms of standardized flow (Qstd). The Sierra Mass Flow meter is calibrated using a bubble meter.

There are two different objectives and three alternative approaches to the derivation of the regression equation that relates the sampler flow measurement device (manometer, Dickson flow recorder, Magnehelic or rotameter) to flow as defined by the calibration orifice. The first objective is the calibration of the sampler to ensure the proper rate of flow during sample collection. The second objective is the calculation of the total volume of air sampled during the sample period, based on the sampler flow indicator readings.

Different samplers have different targets for both the flow rates and the units of measure. A TSP sampler has an EPA target flow of 39 to 60 standard cubic feet per minute (SCFM); the PM-10 has a target flow of 40 ± 4 actual cubic feet per minute (ACFM); the SVOC sampler has a flow target of 0.2 standard cubic meters per minute (SCMM); the VOC target flow is 200 standard cubic centimeters per minute (SCCM); and the mercury target is 100 SCCM. Because the target flow rate is different for each sampler type, the calculations of the different calibration equations (ie. regressions) contain different X and Y variables. In general it is traditional to set up regressions to solve for the Y variable. Since a calibration objective is to determine the instrument set point, this set point is used as the unknown (Y) variable and the known (X) variable should represent measured flow. Conversely, when the total flow volume calculations are be made, flow is the Y variable and the instrument flow indicator reading is the X variable.

The following list defines the three alternative units of volume represented by the Y and X variables for the various samplers, when performing calibrations.

Regression Equation — Delta H = Magnehelic or manometer reading

$Y = mX + b$ — Delta I = rotameter or Dickson reading

X	Delta H Y	Delta I	To calculate Qstd
Qr	$\sqrt{\text{Delta H}}$	Delta I	Qr * $\sqrt{\text{STP}}$
Qstd	$\sqrt{(\text{Delta H} * \text{STP})}$	Delta I * $\sqrt{\text{STP}}$	Read Directly
Qa	$\sqrt{(\text{Delta H} \div \text{STP})}$	Delta I ÷ $\sqrt{\text{STP}}$	Qa * STP

For the IRA-F project, the TSP sampler target flow is 40 SCFM (Qstd). Initially the flows of the TSP samplers were read from manometers, but later, Dickson flow recorders were installed. The Qa target for a PM-10 sampler is 40 ACFM at the seasonal average temperature and pressure. A Dickson flow recorder is used as a flow recorder/indicator. The Qstd target for a PS-1 sampler is 0.2 SCMM, which is indicated by a Magnehelic flow indicator. The VOTA samplers are fitted with rotameters as flow indicators. The required Qstd target flow for VOC samples 200 SCCM (0.0002 SCMM), and for mercury is 100 SCCM (0.0001 SCMM). The rotameter flow reading does require the square root conversion for the regression because the rotameter estimates mass flow

rather than volume flow. The Dickson flow recorder does not require the square root conversion because the recording chart has a logarithmic scale, rather than a linear scale, which automatically converts the data in a similar way to a square root conversion. Although the Qr alternative is not used for calibrations, Qr is used as the Y variable in total volume calculations, as described in Section 8.

7.1 Calibration of TSP (Hi-Vol) Sampler

Several procedural steps are required for Hi-Vol sampler calibration. As-found condition must be determined prior to any maintenance or equipment adjustment. Maintenance is performed, and final settings are made before final readings are taken to determine if the calibration was completed correctly.

EQUIPMENT:

- Variable resistance calibration orifice with hose connection
- EPA calibration look-up table of Qr in CFM units vs. inches of water
- Calibration manometer with 12 inch scale
- Orifice mounting plate
- TSP filter frame and clean TSP filters
- Dummy media to be used on PS-1, VOTA and PM-10 samplers
- Barometer for pressure readings
- Thermometer for temperature readings
- Calibration forms and black ink pen
- Dickson flow recorder charts
- Calculator or lap-top computer with calibration spreadsheet

7.1.1 Determination of TSP Sampler As-Found Condition

1. Enter the identification information on the calibration data sheet as shown in Figure 7-1.

2. Install the dummy media on all samplers at the site except the TSP sampler. Set up the TSP sampler with a clean fiberglass filter, and install the orifice.

3. On the back of a fresh Dickson recorder chart, write the date and site ID, and initials. Install the chart on the recorder, and check to be sure the pen is registering on the chart. Rotate the chart to the correct time. Do not adjust the zero of the Dickson recorder.

4. Verify that the mass flow controller (MFC) is connected and that the calibration manometer is properly zeroed. Turn on all samplers.

5. After the samplers have warmed up, check the orifice to be sure it is in the full open position. Check the zero of the calibration manometer, then attach it to the calibration orifice.

6. Record the ambient temperature and pressure in the appropriate blanks on the calibration form where the calculation of the square root of STP is done.

7. Record the readings from the calibration manometer and the Dickson flow recorder. If the wind is calm and the readings are stable, one or two readings are adequate. If it is windy then numerous readings may be necessary with an average calculated and then entered on the calibration form.

EBASCO IRA-F AIR MONITORING PROGRAM
ROCKY MOUNTAIN ARSENAL
TSP CALIBRATION DATA SHEET

Figure 7-1 TSP Calibration

SITE: ______________

DATE: ______________ PERFORMED BY: ______________

SAMPLER MODEL/SN: ______________ FLOW CONTROLLER MODEL/SN: ______________

MOTOR MODEL/SN: ______________ CALIBRATION ORIFICE SN: ______________

DICKSON MODEL/SN: ______________ BAROMETER S/N: ______________

ELAPSED TIME INDICATOR: ______________ PSYCHROMETER S/N: ______________

I. "As-Found" Flow Rate (WITH CLEAN GLASS FILTER, ORIFICE, AND MFC CONNECTED)

Actual Temp. = ____°F = Ta = (____°C + 273) = ____°K   Actual Press. = Pa = _______"Hg

SQRT. STP Corr. Factor = $((Pa/Pstd)(Tstd/Ta))^{1/2}$

= ((_____"Hg/29.92"Hg)(298K/_____K))$^{1/2}$ = ______________

As-Found Calibration Manometer Reading (Delta P) = ______"H_2O Dickson Reading ______

Convert Delta P to Flow at STP (Qr) using EPA Look-Up Table => Qr = _________CFM at STP

Standardized Flow (Qstd) = Qr * SQRT. STP = _______CFM * _______ = _________SCFM

II. Perform Maintenance

Were brushes changed? ______   Was motor replaced? ______   Was Dickson zeroed? ______

Comments: ____

____

III. Calibration (WITH MFC DISCONNECTED, WITH ORIFICE, WITHOUT FILTER)

Updated SQRT. STP Corr. Factor:

Actual Temp. = Ta = (____°C + 273) = ____°K   Actual Press. = Pa = _______"Hg

SQRT. STP Corr. Factor = $((Pa/Pstd)(Tstd/Ta))^{1/2}$

= ((_____"Hg/29.92"Hg)(298K/_____K))$^{1/2}$ = ______________

PLATE NUMBER OR VRO SETTING	CALIBRATION MANOMETER (DELTA P) "H_2O	EPA LOOK-UP FLOW AT STP (Qr) CFM AT STP	STANDARD FLOW Qr*SQRT. STP (Qstd) SCFM (Y-AXIS)	DICKSON READING (I) (X-AXIS)	COMMENTS

REGRESSION RESULTS: SLOPE = m = ____________; INTERCEPT = b = ____________;

CORR. COEF. = r = ____________.

EBASCO IRA-F AIR MONITORING PROGRAM
ROCKY MOUNTAIN ARSENAL
TSP CALIBRATION DATA SHEET

Figure 7-1 TSP Calibration (Cont.)

SITE: ______________

DATE: ______________________________ PERFORMED BY: ______________________________

IV. Mass Flow Controller (MFC) Set Point (WITH GLASS FILTER, MFC CONNECTED, WITH ORIFICE)

REGRESSION RESULTS: SLOPE = m = ____________; INTERCEPT = b = ___________;
(from previous page)

UPDATED TEMP. AND PRESS. IF NECESSARY

Ta = ____°F = _______°C + 273 = ________°K Pa = __________"Hg

UPDATED SQRT STP Corr. Factor = ((_____"Hg/29.92"Hg)*(298K/_____K))$^{1/2}$ = _________

Convert target flow of 40 scfm to Qr in order to get the Orifice Manometer Set Point from EPA look-up table.

Qr = 40 SCFM / SQRT. STP = 40 / ______ = ___________

Use EPA Look-Up Table to Find the Calibration Manometer Set Point:

Qr = _______CFM at STP => __________"H_2O on Calibration Manometer

Adjust MFC to the Proper Calibration Manometer Set Point.

As-Left Calibration Manometer Set Point = _________"H2O

V. Test MFC Operation Using The Dickson Recorder (WITH GLASS FILTER, MFC CONNECTED, W/OUT ORIFICE)

CALCULATE TARGET DICKSON SET POINT

Use Regression Equation to Solve for Dickson Reading (I):

x = 40 SCFM
I = (x-b) / m

I = (40 - _________) / _________ = ___________

TARGET SAMPLER SET POINT (SSP) = I = _____________ ACTUAL DICKSON SSP = ______________

%ERROR = (ACTUAL - TARGET)/TARGET *100

= ____________%

8. Use the calibration manometer reading to determine the Qr flow from the calibration orifice look-up table. Multiply the Qr flow by the square root of STP to obtain the standardized flow. Enter the standardized flow value on the form. This value is the as-found standardized flow rate (Qstd) which will be entered into the monthly spreadsheets and used in volume computations of the samples collected since the previous full calibration was performed.

7.1.2 <u>Maintenance of the TSP Sampler</u>

Sampler maintenance activities should be documented in the space available on the calibration form. If the brushes are changed, the new brushes must be seated before the calibration can proceed. The rebuilt motor must be run for at least 30 minutes, with a reduced motor speed, to properly seat the brushes without damage to the motor. A portable voltage variator, placed in-line with the sampler motor, is used to control the motor speed. The voltage is adjusted to 50 to 60 volts, giving a Dickson flow reading of about 20. A TSP filter frame, with a filter installed must, be in place during brush seating. Once the brushes have been seated, the calibration may proceed.

7.1.3 <u>TSP Sampler Calibration</u>

The TSP sampler calibration is required to establish the relationship between the Dickson flow recorder response and true flow as defined by the calibration orifice. Prior to calibration, updated temperature and pressure readings should be recorded, and the square root of STP correction factor should be recalculated to adjust for any change in atmospheric conditions during maintenance activities.

1. Zero the calibration manometer and the Dickson recorder.

2. Install the calibration orifice, without a filter, on the TSP sampler.

3. Disconnect the MFC from the circuit, and connect the sampler motor directly to the line voltage.

4. Take seven readings, bracketed around the target flow of 40 SCFM, but ranging approximately 20 SCFM above and below this value. Refer to the EPA calibration look-up table to determine the calibration manometer reading which will correspond to the target flow rate.

5. Record the calibration manometer reading and the Dickson recorder reading on the calibration worksheet for each of the seven readings. Rotate the Dickson chart by hand before each reading. Mark and labeled each reading on the chart.

6. Convert the calibration manometer values to standardized flow (Qstd), by looking up the flow at STP (Qr) on the EPA calibration table, and then multiplying this value by the square root of the STP correction factor. (The computer spreadsheet calculates this automatically.)

7. Perform a regression using the Qstd value as the Y variable and the Dickson reading as the X variable. Record the slope, Y-intercept and correlation coefficient on the calibration form.

   Note: While the table presented in Section 5.0 indicates that the Dickson reading should be multiplied by the correction factor of the

square root of the STP for a better correlation coefficient, the correlations obtained by the CMP have been so good without this factor, it is considered unnecessary. To retain consistency with CMP, IRA-F has also adopted this method.

8. Perform a second regression, using Qr as the Y variable and the Dickson reading as the X variable. The results of this regression may be used to determine flow rates of actual samples, if deemed appropriate at the time, in the event of a mass flow meter malfunction.

7.1.4 Calculation of MFC Set Point for TSP Sampler

The set point for the mass flow controlled TSP sampler is determined by calculating what the Qr value of the calibration orifice must be to yield a target Qstd flow of 40 SCFM at current temperature and pressure.

1. Recalculate the square root of STP, if readings have changed, and divide the 40 SCFM value by this correction factor to give Qr, based on the following formulas:

$$Qstd = Qr * \sqrt{STP} \quad \text{or} \quad Qr = Qstd \div \sqrt{STP}$$

2. Once the Qr value has been calculated, find the corresponding manometer setting in the EPA look-up table. This is the target manometer setpoint. (The spreadsheet calculates this value automatically.)

3. Reconnect the sampler motor to the MFC, install a filter with the orifice. Fully open the orifice and start all samplers at the site.

4. Using the special tool (screwdriver) attached to the door of the MFC, adjust the small potentiometer on the face of the MFC. Allow time for the MFC to stabilize after each adjustment. After the target manometer set point has been reached, or nearly reached if it cannot be exactly achieved, rotate the Dickson chart and label the Dickson response as the "set point". Record the actual manometer set point, find the Qr value from the EPA look-up table, and multiply this Qr value by the square root of STP. The resulting value is the as-left standardized flow rate (Qstd), which will be entered into the monthly spreadsheets and used in volume computations of ambient samples, until the next complete calibration is performed. Because the MFC controls the mass flow rather than the actual flow, only the mass flow (Qstd) will remain constant. The actual flow (Qa) will vary with temperature and pressure.

7.1.5 Test of Dickson Response -vs- Regression Estimate

1. Turn off the sampler and replace the orifice and plate with a clean filter in a normal cartridge.

2. Turn on sampler and allow the Dickson reading to stabilize. Rotate the Dickson chart to mark the reading level. Turn off the sampler and label this reading.

3. Use the calibration regression equation to estimate the Dickson reading when Qstd (the X value) is 40 SCFM. This is calculated automatically by the computer spreadsheet. Compare the estimated value with the actual Dickson reading and calculate the percent error. This error should be less than 5 percent. The calculations

involved in this process have been automated with a Lotus 123 spreadsheet called TSPCALI.WK1. This greatly facilitates the calibration and allows visual inspection of the regression to observe the more deviant data points and to recheck them if desireable.

7.2 Calibration of PM-10 (Hi-Vol) Sampler

Several procedural steps are required for PM-10 sampler calibration. As-found condition must be determined prior to any maintenance or equipment adjustment. Maintenance is performed, and final settings will be made before final readings are made to determine if the calibration has been completed successfully.

EQUIPMENT:

- Variable resistance calibration orifice with hose connection
- EPA calibration table of Qr in CFM units vs. inches of water
- Calibration manometer with 12 inch scale
- Orifice mounting plate
- PM-10 filter frame and clean PM-10 quartz filters
- Appropriate dummy media to be used on PS-1, VOTA and TSP samplers
- Barometer for pressure readings
- Thermometer for temperature readings
- Calibration forms and black ink pen
- Dickson flow recorder charts
- Calculator or laptop computer with calibration spreadsheet

7.2.1 Determination of PM-10 Sampler As-Found Condition

1. Enter the identification information, including model and serial numbers, on the calibration data sheet as shown Figure 7-2.

2. Install the dummy media on all samplers at the site except the PM-10 sampler. Set up the PM-10 sampler with a clean quartz filter, and install the orifice.

3. On the back of a fresh Dickson recorder chart, write the date, site ID and initials. Install the chart on the Dickson recorder and check to be sure the pen is registering on the chart. Rotate the chart to the correct time. Do not adjust the zero setting of the Dickson recorder.

4. Verify that the mass flow controller (MFC) is connected and that the calibration manometer is properly zeroed. Turn on all samplers.

5. After the samplers have warmed up, check the orifice to be sure it is in the full open position. Attach the calibration manometer to the calibration orifice.

6. Record the ambient temperature and pressure in the appropriate blanks on the calibration form where the calculation of the square root of STP is done.

7. Record the readings from the calibration manometer and the Dickson flow recorder. If the wind is calm and the readings are stable, one or two readings are adequate. If it is windy then numerous readings may be necessary with an average calculated and entered on the calibration form.

EBASCO IRA-F AIR MONITORING PROGRAM
ROCKY MOUNTAIN ARSENAL
PM-10 CALIBRATION DATA SHEET

Figure 7-2 PM-10 Calibration

SITE: ______________

DATE: ______________ PERFORMED BY: ______________

SAMPLER MODEL/SN: ______________ FLOW CONTROLLER MODEL/SN: ______________

MOTOR MODEL/SN: ______________ CALIBRATION ORIFICE SN: ______________

INLET MODEL/SN: ______________ BAROMETER S/N: ______________

ELAPSED TIME INDICATOR: ______________ PSYCHROMETER S/N: ______________

Conversions: °K = (°F-32)/1.8) + 273
CFM = CMM * 35.31

I. Information Needed Before Leaving For Field.

Seasonal Avg. Temp. = Ts = (____°C + 273) = ____°K Seasonal Avg. Press. = Ps = _____"Hg

II. "As-Found" Flow Rate (WITH CLEAN QUARTZ FILTER, ORIFICE, AND MFC CONNECTED)

Actual Temp. = Ta = (____°C + 273) = ____°K Actual Press. = Pa = _______"Hg

SQRT. STP Corr. Factor = $((Pa/Pstd)(Tstd/Ta))^{1/2}$

= ((_____"Hg/29.92"Hg)(298K/_____K))$^{1/2}$ = ______________

As-Found Calibration Manometer Reading (Delta P) = ______"H_2O Dickson Reading ______

Convert Delta P to Flow at STP (Qr) using EPA Look-Up Table =) Qr = _________CFM at STP

Standardized Flow (Qstd) = Qr * SQRT. STP = ________CFM * _______ = _________SCFM

III. Perform Maintenance

Were brushes changed? ______ Was motor replaced? ______ Was Dickson zeroed? ______

Comments: ____

____

IV. Calibration (WITH MFC DISCONNECTED, WITH ORIFICE, WITHOUT FILTER)

Updated SQRT. STP Corr. Factor:

Actual Temp. = Ta = (____°C + 273) = ____°K Actual Press. = Pa = _______"Hg

SQRT. STP Corr. Factor = $((Pa/Pstd)(Tstd/Ta))^{1/2}$

= ((_____"Hg/29.92"Hg)(298K/_____K))$^{1/2}$ = ______________

PLATE NUMBER OR VRO SETTING	CALIBRATION MANOMETER (DELTA P) "H_2O	EPA LOOK-UP FLOW AT STP (Qr) CFM AT STP	ACTUAL FLOW Qr/SQRT. STP (Qa) CFM (Y-AXIS)	DICKSON READING (I)	CORRECTED DICKSON $I(Ta/(Pa*25.4))^{1/2}$ (IC) (X-AXIS)

REGRESSION RESULTS: SLOPE = m = ____________; INTERCEPT = b = ___________;

CORR.COEF. = r = ____________.

EBASCO IRA-F AIR MONITORING PROGRAM
ROCKY MOUNTAIN ARSENAL
PM-10 CALIBRATION DATA SHEET

Figure 7-2 PM-10 Calibration (Cont.)

SITE:____________

DATE:____________________ PERFORMED BY:____________________

V. Mass Flow Controller (MFC) Set Point (WITH QUARTZ FILTER, MFC CONNECTED, WITH ORIFICE)

REGRESSION RESULTS: SLOPE = m = __________; INTERCEPT = b = __________;
(from previous page)

UPDATED TEMP. AND PRESS. IF NECESSARY

Ta = ______°C + 273 = ______°K Pa = ______"Hg

Seasonally Adjusted Set Point Flow Rate (SFR) = 40 CFM (Ps/Pa)(Ta/Ts)
(actual flow Qa in CFM)
= 40*(______/______)(______/______) = ______

Convert Qa to Qr in order to get Orifice Manometer Set Point from EPA Look-Up Table:

$Qr = Qa * SQRT. STP = Qa * ((Pa/Pstd)(Tstd/Ta))^{1/2}$

$= \_\_\_\_\_\_ * ((\_\_\_\_\_\_/\_\_\_\_\_\_)(\_\_\_\_\_\_/\_\_\_\_\_\_))^{1/2} = \_\_\_\_\_\_$

Use EPA Look-Up Table to Find the Calibration Manometer Set Point:

Qr = ______CFM at STP => ______"H2O on Calibration Manometer

Adjust MFC to the Proper Calibration Manometer Set Point. As left:__________

VI. Test MFC Operation Using The Dickson Recorder
(WITH QUARTZ FILTER, MFC CONNECTED, W/OUT ORIFICE)

Use Regression Equation to Solve for IC (Corrected Dickson Reading):

IC = (SFR - b)/m

IC = (______-______) / ______ = ______

Calculate Seasonally Adjusted Sampler(Dickson) Set Point (SSP) by Converting IC to I:

$SSP = I = IC/(Ta/(Pa*25.4))^{1/2}$

$= \_\_\_\_\_\_/(\_\_\_\_\_\_/(\_\_\_\_\_\_*25.4))^{1/2} = \_\_\_\_\_\_$

TARGET SSP = __________ ACTUAL DICKSON SSP = __________

%ERROR = (ACTUAL - TARGET)/TARGET *100

= __________%

8. Use the calibration manometer reading to determine the Qr flow from the calibration orifice look-up table. Multiply the Qr flow by the square root of STP to obtain the standardized flow. Enter the standardized flow value on the form. This value is the as-found standardized flow rate (Qstd) which will be entered into the monthly spreadsheets and used in volume computations of the samples collected since the previous full calibration was performed.

7.2.2 Maintenance of PM-10 Sampler

Sampler maintenance activities should be documented in the space available on the calibration form. If the brushes are changed, the new brushes must be seated before the calibration can proceed. The rebuilt motor must be run for at least 30 minutes at a reduced motor speed to properly seat the brushes without damage to the motor. A portable voltage variator, placed in-line with the sampler motor, is used to control the motor speed. The voltage is adjusted to 50 to 60 volts, giving a Dickson reading of about 20. A PM-10 filter cartridge, with a filter installed must, be in place during brush seating. Once the brushes have been seated, the calibration may proceed.

In addition to motor maintenance, PM-10 samplers require special cleaning. Each calendar quarter the shim (impact plate) inside the upper housing of the PM-10 sampler must be cleaned and the surface coated with silicone spray. This is done to ensure the particulate size separation as required by this selective sampler.

7.2.3 PM-10 Sampler Calibration

Prior to PM-10 sampler calibrations, the seasonal average temperature and pressure for the upcoming season must be obtained. These average values will be used during the calibration. The PM-10 sampler calibration is required to establish the relationship between the Dickson flow recorder response and true flow as defined by the calibration orifice. Prior to calibration, updated temperature and pressure readings should be recorded, and the square root of STP correction factor should be recalculated to adjust for any change in atmospheric conditions during maintenance activities.

1. Zero the calibration manometer and the Dickson recorder.

2. Install the calibration orifice, without a filter, on the PM-10 sampler.

3. Disconnect the MFC from the circuit, and connect the sampler motor directly to the line voltage.

4. Take seven readings, bracketed around target flow of 40 ACFM, but ranging approximately 20 SCFM above and below this value. Refer to the EPA calibration look-up table to determine the calibration manometer reading which will correspond to the target flow rate.

5. Record the calibration manometer reading and the Dickson recorder reading on the calibration worksheet for each of the seven readings. The Dickson chart should be rotated by hand before each reading, and the point at which the reading was taken should be marked and labeled on the chart.

6. Convert the calibration manometer values to actual flow (Qa), by looking up the flow at STP, (Qr) on the EPA calibration table, and

then dividing this value by the square root of the STP correction factor. The computer spreadsheet calculates this automatically.

7. Before performing the regression to determine the correlation coefficient, the Dickson reading value must be converted by applying the following EPA required formula. To achieve the converted Dickson reading (IC), multiply the Dickson value by the square root of ambient temperature in degrees Kelvin divided by the ambient pressure in millimeters of mercury.

$$IC = I \left[\frac{\text{Ambient Temperature}}{\text{Ambient Pressure} * 25.4 \text{ mm Hg/" Hg}}\right]^{1/2}$$

8. Perform a regression using the Qa value as the Y variable and the corrected Dickson reading (IC) as the X variable.

   Note: While the table presented in Section 5.0 indicates that the Dickson reading should be multiplied by the correction factor of the square root of the STP, the EPA conversion is required for this sampler due to its greater accuracy.

9. Record the regression results on the calibration worksheet.

10. Perform a second regression, using Qr as the Y variable and the Dickson reading as the X variable. The results of this regression may be used to determine flow rates of actual samples, if deemed appropriate at the time, in the event of a mass flow meter malfunction.

7.2.4 Calculation of MFC Set Point for PM-10 Sampler

The set point for the mass flow controlled PM-10 sampler is determined by calculating the Qr value of the calibration orifice necessary to yield a Qstd target flow capable of maintaining an actual flow (Qa) of 40 ACFM, based on the seasonal average temperature and pressure. The first step is to correct the 40 ACFM target Qa flow rate, calculated at the seasonal average temperature and pressure, to the flow rate of this same mass of air at current ambient conditions. This is done by multiplying 40 ACFM by the ratio between current ambient conditions and the calculated seasonal averages, using the following formula:

$$\text{Corrected Qa} = 40 \text{ ACFM} * \frac{\text{Seasonal Ave. Pressure}}{\text{Seasonal Ave. Temperature}} * \frac{\text{Ambient Temperature}}{\text{Ambient Pressure}}$$

1. Recalculate the square root of STP, and convert Qa to Qr by multiplying Qa by the correction factor ($\sqrt{STP}$). This conversion is based on the following relationships:

$$Qstd = Qr * \sqrt{STP}$$

and $$Qstd = Qa * STP$$

So: $$Qr * \sqrt{STP} = Qa * STP$$

Reduces to: $$Qr = Qa * \sqrt{STP}$$

2. Once the Qr value has been calculated, find the corresponding manometer setting in the EPA look-up table. This is the target

manometer setpoint. The spreadsheet calculates this value automatically.

3. Reconnect the motor to the MFC and install the orifice, with a filter. Fully open the orifice and start the all samplers at the site.

4. Using the special tool (screwdriver) attached to the door of the MFC, adjust the small potentiometer on the face of the MFC. Allow time for the MFC to stabilize after each adjustment. After the target manometer set point has been reached, or nearly reached if it cannot be exactly achieved, rotate the Dickson chart and label the Dickson response as the "set point". Record the actual manometer set point, find the Qr value from the EPA look-up table, and multiply this Qr value by the square root of STP. The resulting value is the as-left standardized flow rate (Qstd), which will be entered into the monthly spreadsheets and used in volume computations of ambient samples, until the next complete calibration is performed. Because the MFC controls the mass flow rather than the actual flow, only the mass flow (Qstd) will remain constant. Because the actual flow (Qa) varies with temperature and pressure, the seasonal average temperature and pressure for the coming months is incorporated into the calculation of the calibration target. To check the operation of the MFC after the calibration, the Qstd value should be checked. The Qstd value can be calculated by multiplying Qr by ($\sqrt{STP}$).

7.2.5 Test of Dickson Response -vs- Regression Estimate

1. Turn off the sampler and replace the orifice and plate with a clean filter in a normal cartridge.

2. Turn on the sampler and allow the Dickson reading to stabilize. Rotate the Dickson chart to mark the reading level. Turn off the sampler and label this reading.

3. Use the calibration regression equation to estimate the corrected Dickson reading (IC) when Qstd (the X value) is 40 ACFM. This is calculated automatically if you are using the computer spreadsheet. Compare the estimated value with the actual Dickson reading and calculate the percent error. The error should be less than 5 percent. The calculations involved in this process have been automated with a Lotus 123 spreadsheet called PM10CALI.WK1. This greatly facilitates the calibration and allows visual inspection of the regression to observe the more deviant data points, and facilitates rechecking them if desireable.

7.3 Calibration of the PS-1 (SVOC/OCP) Sampler

EQUIPMENT:

Calibration orifice with hose connection
EPA calibration look-up table of Qr in CMM units vs. inches of water
Calibration manometer
Dual sampling module with PUF assembly and quartz pre-filters
Dummy media to be used on TSP, PM-10 and VOTA samplers
Barometer for pressure readings
Thermometer for temperature readings
Calibration forms and black ink pen
Calculator or laptop computer with spreadsheet program

7.3.1 Determination of PS-1 Sampler As-Found Condition

1. Enter the identification information on the calibration data sheet as shown in Figure 7-3.

2. Install the dummy media on all samplers at the site except the PS-1 sampler. Set up the PS-1 sampler with PUF assembly and a clean quartz pre-filter in the dual sampling module. Install the orifice, but do not attach the pressure hose to the manometer. Start all samplers at the site and allow them to warm up.

3. Check the zero of the calibration manometer, then attach it to the calibration orifice.

4. Record the ambient temperature and pressure in the appropriate blanks on the calibration form where the calculation of the square root of STP is done.

5. After the sampler has warmed up, record the readings from the calibration manometer and the Magnehelic as close to simultaneously as possible. If the wind is calm and both readings are stable, one or two readings are adequate. If it is windy, numerous readings may be necessary, and an average of these calculated, to be entered on the calibration form.

6. Use the calibration manometer reading to determine the Qr flow from the calibration orifice look-up table. Multiply the Qr flow by the square root of STP to obtain the measured as-found standardized flow. Enter the standardized flow value on the form.

7. Use the square root of the Magnehelic value and the regression equation (for Qr versus the square root of the Magnehelic) from the previous calibration to determine a computed as-found flow rate (Qr). Convert this flow rate to a standardized flow rate. Compute the percent difference between this value and the measured as-found flow rate from step 6. The result is the measure of accuracy of the previous calibration regression equation applied at the present time. If it is greater than $\pm$ 10%, adjustments to the volume of samples taken since the previous calibration may be necessary. A linear correction in time, based on the number of days between the previous and current calibrations, should be employed to correct such values.

7.3.2 Maintenance of PS-1 Sampler

Sampler maintenance activities should be documented in the space available on the calibration form. If the brushes are changed, the new brushes must be seated before the calibration can proceed. The rebuilt motor must be run for at least 30 minutes, with the motor speed adjusted down to a Magnehelic reading of about 20, corresponding to a voltage of 50 to 60 volts, to properly seat the brushes without damage to the motor. The voltage variator, on the sampler is used to control the motor speed. A dual sampling module, with pre-filter and PUF, must be in place during the seating process. Once the brushes have been seated, the calibration may proceed.

7.3.3 Calibration of the PS-1 Sampler

Following the as-found condition determination and any maintenance, the Magnehelic must be calibrated. The purpose of this calibration is to

EBASCO IRA-6 AIR MONITORING PROGRAM
ROCKY MOUNTAIN ARSENAL
PS1 CALIBRATION DATA SHEET

Figure 7-3 PS1 Calibration

SITE: ____________________

DATE: ____________________ PERFORMED BY: ____________________

PS1 MODEL/SN: ____________________ BAROMETER S/N: ____________________

ORIFICE SN: ____________________ AMBIENT PRESSURE: ____________________

MOTOR MODEL/SN: ____________________ PSYCHROMETER S/N: ____________________

TIMER MODEL/SN: ____________________ AMB. TEMP. [(_____°F - 32)x(5/9)] + 273 = _______K

ELAPSED TIME: ____________________

I. "As Found" Flow Rate (use clean filter and PUF)

Square Root of
Standard Temp. & Press. Correction Factor (STP) = $\left[\frac{\_\_\_\_"}{29.92"} \times \frac{298\ K}{\_\_\_\_\ K} \right]^{1/2}$ =

Pressure Drop, Delta P	Reading 1	Reading 2	Reading 3	Reading 4	Reading 5	Average
Calibration Manometer, in.						
Sampler Magnehelic, in.						

Average Calibration
Manometer Delta P ________(use conversion table) => ________cubic meters/minute (CM/M)

"As Found" Flow Rate = [______cm/min] X [______] = ______standard cubic meters/min. (SCM/M)
(Sq.Rt.STP)

II. Perform any scheduled or required maintenance

Were motor brushes changed? ______________

List maintenance items performed ________________________________

____

____

____

Figure 7-3 PS1 Calibration (Cont.)

EBASCO IRA-6 AIR MONITORING PROGRAM
ROCKY MOUNTAIN ARSENAL
PS1 CALIBRATION DATA SHEET

SITE: ____________

PERFORMED BY: ________________ CALIBRATION ORIFICE S/N: ________________ MANOMETER MODEL: ____________

DATE/TIME: ________________ AMB. PRESS: __________"Hg AMB. TEMP: [(______°F - 32)5/9] + 273 = __________K

Updated Square Root of STP Correction Factor = $\left[\dfrac{\_\_\_\_\_\_"}{29.92"} \times \dfrac{298\ K}{\_\_\_\_\_\_\ K}\right]^{1/2}$ = ________

>>>> REMOVE QUARTZ FILTER <<<<<<

CAL. ORIFICE DATA			SAMPLER MAGNEHELIC DATA			% DIFFERENCE BETWEEN CALIB. & SAMPLE FLOW RATES FROM REGRESSION ESTIMATE	COMMENTS
MANOMETER, "H_2O	FLOW RATE *CM/M	FLOW RATE **SCM/M (Y-axis)	MAGNEHELIC "H_2O	ROOTED MAGNEHELIC (X-axis)	FLOW RATE ***SCM/M ESTIMATE		
			70				
			60				
			50				
			45				
			40				
			35				
			30				

*CM/M = cubic meters/minute (use calibration table)
**SCM/M = standard cubic meters/minute = CM/M @ STP X sq.rt. of STP corr. factor
*** This estimate is based on the regression of Y vs. X

Y-INTERCEPT (b) _______

SLOPE (m) _______

CORRELATION COEF. _______

TARGET SET FLOW (y) = .200 SCM/M

TARGET MAGNEHELIC SETTING (x) ____________ x=(y-b)/m
(To be set with clean filter and PUF but w/o orifice)

ACTUAL MAGNEHELIC READING ____________

establish the relationship of flow rate, as defined by the calibration orifice, to the sampler Magnehelic reading.

1. Remove the quartz pre-filter from dual sampling module, and reinstall the module and orifice on the sampler. Start all samplers at the site. Zero the Magnehelic, taking into account possible errors due to parallax by observing the Magnehelic from directly in front of the dial. Zero the calibration manometer if necessary.

2. Perform a leak test of the system.

   a. With the PS-1 running at a Magnehelic reading of about 40, clamp off the hose connecting the orifice to the manometer, then turn the power off. If the fluid level in the calibration manometer remains elevated, there is no leakage between the clamp and manometer.

   b. Start the sampler, and while it is running, clamp the hoses on both sides of the Magnehelic. Turn off the sampler. If the Magnehelic remains elevated no leakage occurs here.

   c. An additional visual evaluation of other connections including the gasket in the quick connect coupling is recommended.

3. Recheck temperature and pressure to determine any change in either or both while maintenance activities were performed. If either has changed since the as-found determination was performed, recalculate the square root of STP.

4. Loosen the lock nut on the voltage variator and increase the voltage until the Magnehelic reads about 80. Adjust the venturi lever until Magnehelic reading drops to 70.

5. Record both the Magnehelic reading and the calibration manometer reading. Repeat the lever adjustment and readings at increments of five or ten units on the Magnehelic until a value of 30 is reached.

6. Reopen the venturi valve to the maximum open position and adjust the voltage variator back down until the Magnehelic reads about 40.

7. Convert the calibration manometer values to standardized flow (Qstd), by looking up the flow at STP (Qr) on the EPA calibration table, and then multiplying Qr by the square root of the STP correction factor. The computer spreadsheet calculates this automatically.

8. Convert the Magnehelic reading by multiplying its square root by the square root of STP.

9. Perform a regression using the converted Magnehelic reading as the X variable and Qstd flow as the Y variable.

10. Record the slope, intercept and correlation coefficient.

11. Solve the regression equation for the Magnehelic setting using a target flow of 0.20 SCMM.

12. To set the PS-1 to this target Magnehelic reading, install the dual sampling module with PUF and pre-filter in place. Using the voltage

variator, adjust the voltage until the target Magnehelic reading is reached.

13. Once the Magnehelic is adjusted to the target, tighten the lock nuts on the voltage variator and the recheck the reading. Record the actual as-left Magnehelic reading.

14. Perform a second regression using Qr as the Y variable and the square root of the Magnehelic as the X variable. The regression constants are entered in the monthly spreadsheets for use in computation of sample volumes.

The calculations involved in this process have been automated with a Lotus 123 spreadsheet called PS1CALI.WK1. This greatly facilitates the calibration and allows visual inspection of the regression to observe the more deviant data points, and facilitates rechecking them if desirable.

7.4 Calibration of VOTA Sampler for VOC and Mercury

The VOTA sampling circuits are calibrated using a Sierra mass flow meter with a 0 to 500 SCCM range. This mass flow meter measures standardized flow rates (in SCCM) directly. Thus there is no flow rate conversion is required as for Hi-vol and PS-1 samplers. The Sierra mass flow meter is calibrated quarterly using a certified bubble meter.

EQUIPMENT:

Sierra mass flow meter with AC and optional DC power adapters
Air filter to be placed in-line with mass flow meter
12 volt DC battery (optional)
Clean Hg and VOC media
Extra Swagelok brass elbow for VOC
Appropriate dummy media to be used on TSP and PS-1 samplers
Barometer for pressure readings
Thermometer for temperature readings
Calibration forms and black ink pen
Calculator or mobile computer with spreadsheet program

The Sierra mass flow meter must be warmed up before use. This can be facilitated by connecting the meter to a 12 volt DC battery while in transit to the sampling site, or by connecting AC power at least five minutes prior to calibrating the samplers. While the flow meter is warming up, the entry and exit ports must be capped to achieve zero flow.

7.4.1 Zeroing the Mass Flow Meter

1. Install clean media in all PS-1, TSP and PM-10 samplers at the site, as well as in the VOTA sampler.

2. Turn all samplers on and allow them to warm up for at least five minutes. The Sierra mass flow meter must also be allowed to warm up as described above.

3. After the mass flow meter readings stabilize, set the zero point by adjusting the set screw in the side of the meter. DO NOT adjust the slope adjustment screw. This would void the current calibration of the meter. Allow the meter to stabilize again.

Note: Recheck the zero point at the end of each calibration and if readings are not as expected, rezero and recalibrate the sampler. Some drift of the zero set point has commonly been observed.

7.4.2 VOTA Sampler As-Found Data

1. Enter the requested information on the calibration data sheet as shown in Figure 7-4.

2. Apply the dummy media to all samplers at the site. Set up the VOC and Hg circuits with the proper media.

3. Record the ambient temperature and pressure readings.

4. After the VOTA sampler has warmed up and the mass flow meter is zeroed and stabilized, attach the flow meter to the Hg or VOC media tube. A Swagelock brass elbow must be attached to the intake of the VOC tube to allow attachment of the flow meter. Allow the flow meter to stabilize.

5. Set the rotameters on all sampling circuits to the set points determined during the previous calibration. Measure and record the standardized flow for each type of media. Record the corresponding VOTA gauge reading for each flow meter reading.

7.4.3 Maintenance of VOTA Sampler

The VOTA system must maintain a vacuum reading of at least 19 psi as indicated on the pressure gauge in the sampler. The vacuum can be adjusted using a pressure relief valve on the left side of the valve gang, where the main vacuum hose separates into different circuits. The vacuum pressure may range between 19 and 25 psi. The motors of the VOTA samplers are not rebuilt, so no brush replacement is required. If excess pressure in the system cannot be reduced with the pressure relief valve, the 7 micron filters should be checked for clogging. Replace the filters if necessary. The tubing used to attach the mercury sampling ampules can be cut by the broken ends of the glass ampules. Replace tubing if it appears worn or damaged. Tygon tubing should be used instead of silicone tubing because it is more resistant to cutting. Any maintenance activity should be recorded on the second page of the VOTA Calibration Data Sheet, illustrated in Figure 7-4. Calibration data is also entered on this page.

7.4.4 Calibration of VOTA Sampler

1. Attach the flow meter to the selected media tube (VOC or Hg) and set the rotameter in that circuit to a series of values above and below the target flow set point. Record the flow meter reading at each setting.

2. Perform a regression using the standardized flow as the Y value and a converted rotameter reading as the X value. The appropriate conversions raise the lower flow Hg (100 SCC/M) rotameter (Aalborg model FM112-02C) reading to the power of 1.66, and the higher flow VOC (200 SCC/M) rotameter (Aalborg model FM082-03C) to the power of 1.05. The correlation coefficient is commonly greater than 0.999.

3. Solve the regression equation for the rotameter setting corresponding to the target standardized flow rate. The target flow rates are 100 SCCM for mercury and 200 SCCM for VOCs. The computed rotameter setting and actual setting, which yeilds the target rate when measured by the mass flow meter, should be virtually identical.

Revised: 10-2-89

Figure 7-4 VOTA Calibration

EBASCO IRA-F AIR MONITORING PROGRAM
ROCKY MOUNTAIN ARSENAL
VOTA CALIBRATION DATA SHEET

SITE: ______________________

DATE: ______________________ PERFORMED BY: ______________________

SAMPLING MEDIA: ______________________ BAROMETER S/N: ______________________

ROTAMETER S/N: ______________________ AMBIENT PRESSURE: __________"Hg

MASS FLOW METER MODEL/SN: ______________________ PSYCHROMETER S/N: ______________________

ELAPSED TIME INDICATOR: ______________________ AMBIENT TEMPERATURE: ________°F

I. List Pertinent Data From Previous Calibration (See Sheet #2 Of Last Calibration)

Previous Mass Flow Meter Reading = X = __________standard cubic centimeters per min. (SCCM)

Previous "Set Point" Rotameter Reading = Y = __________Black Ball (BB)

Previous VOTA Gauge Reading = _________"

II. "As Found" Flow Rate

"As Found" VOTA Gauge Reading = _________"

Measure "As Found" Mass Flow Meter Reading Using Previous "Set Point" Rotameter Reading

"As Found" Mass Flow Meter Reading = X' = __________SCCM

% Deviation From Previous Mass Flow Meter Reading = 100 [(X' - X) / X] = ________%

If Deviation Exceeds 10% Then Perform An "As Found" Multipoint Calibration

III. "As Found" Multipoint Calibration (If Necessary)

"As Found" Mass Flow Meter Reading (SCCM) "Y_{AF}"								
Rotameter Reading - Black Ball "X_{AF}"								

Perform Linear Fit For Transformed "X_{AF}" And "Y_{AF}" Coordinates

(Y_{AF}) = m(transformed X_{AF}) + b

b = Y-intercept = __________ m = Slope = __________ Corr. Coef. = __________

Revised: 10-2-89

Figure 7-4 VOTA Calibration
(Cont.)

EBASCO IRA-F AIR MONITORING PROGRAM
ROCKY MOUNTAIN ARSENAL
VOTA CALIBRATION DATA SHEET

SITE: ____________

SAMPLING MEDIA: ________ DATE: ____________________ PERFORMED BY: ____________

IV. Perform Any Scheduled Maintenance

List maintenance items performed ____

____

____

____

V. New Multipoint Calibration, Linear Fit, Set Rotameters, And Graph

New Mass Flow Meter Reading (SCCM) "Y"								
Rotameter Reading - Black Ball (BB) "X"								

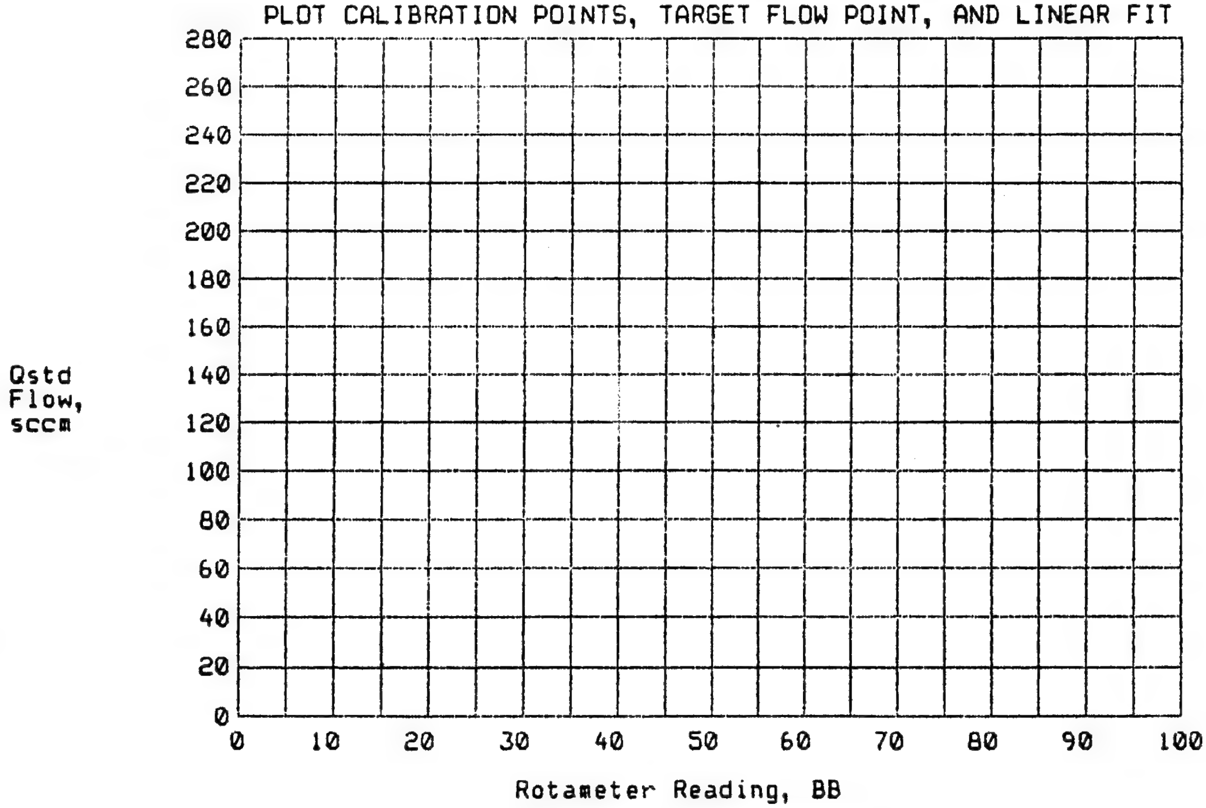
Perform Linear Fit For "Transformed X" and "Y" Coordinates   y = m(transformed x) + b

b = Y-intercept = ________   m = Slope = ________   Correlation Coef. = ________

Set Rotameter For Target Flow

Target Mass Flow Meter Reading = __________(SCCM)   Target Rotameter Reading at Target Flow = ____________

PLOT CALIBRATION POINTS, TARGET FLOW POINT, AND LINEAR FIT



Two Arbitrary Points To Draw Linear Fit Y=mX+b

X=__________ Y=__________ ; X=__________ Y=__________

4. Upon completion of calibration of each rotameter, check the zero of the mass flow meter to verify accuracy. Recalibrate if the zero has drifted significantly (3 or more SCCM).

5. Perform a regression using Qr ($Qr = Qstd/\sqrt{STP}$) as the Y variable and the converted rotameter reading as the X variable. The regression constants are entered into the monthly spreadsheets for use in computing sample volumes.

The calculations involved in this process have been automated with a Lotus 123 spreadsheet called VOTACALI.WK1. This greatly facilitates the calibration, and allows visual inspection of the regression to observe the more deviant data points and facilitates rechecking them if desirable.

8.0 CALCULATION OF TOTAL FLOW VOLUMES

The total volumes for all samples are calculated using a computerized Lotus 123 spreadsheet. A separate spreadsheet is created for each month, and the file names follow the format FLOWmmyy.WK1. The mm represents the month and the yy represents the year. For example, the flow data for May 1989 are stored in a file named FLOW0589.WK1. The spreadsheet calculates the time weighted average flow (Qr) for the sampling period, corrects to Qstd using the seasonal temperature and pressure averages for the sampling period, then multiplies this value by the total elapsed time. All total flow volumes are presented in SCMM.

The meteorological data are provided by the Rocky Mountain Arsenal Comprehensive Monitoring Program (CMP). These data are divided into monthly blocks, and stored in Lotus 123 files named METmmyy.WK1. The revised data are stored in files titled METmmyyX.WK1. From these files, the average temperature and pressure for the sampling periods are derived. The SVOC, VOC and mercury samples are taken over a roughly noon to noon sample period. The actual time period used to calculate the temperature and pressure averages incorporates the midpoint of the sample run and the sample retrieval time. Sample installation or retrieval typically takes one to one and one half hours, so the actual time period average may differ from the calculated average by about half an hour. The specific algorithms for the different media are generally explained below. A more detailed presentation of the algorithms is presented in the spreadsheet documentation. This can be found in a Wordperfect file named IRA-FLOW.DOC.

8.1 Calculation of Total Sample Volume for TSP

The total volume of a given sample is determined using an average flow for the sampling period in question. This flow is the result of averaging the set point flow (as-left) determined during the last full calibration performed prior to a given sampling period, and the as-found flow of the next full calibration performed immediately after the sampling period. In other words, the sample volumes cannot be calculated until the next calibration after the given sampling period has been completed.

$$\frac{\text{Prior As-Left Flow + New As-Found Flow}}{2} = \text{Average Flow For Sampling Period}$$

$$\text{Average Flow For Sampling Period * Time = Sample Volume}$$

8.2 Calculation of Total Sample Volume for PM-10

The total volume of a given sample is determined using an average flow for the sampling period in question. This flow is the average of the set point flow (as-left) determined during the last full calibration performed prior to a given sampling period, and the as-found flow of the next full calibration performed after the sampling period. In other words, the sample volumes cannot be calculated until the next quarterly calibration following a given sampling period has been completed.

$$\frac{\text{Prior As-Left Flow + New As-Found Flow}}{2} = \text{Average Flow For Sampling Period}$$

$$\text{Average Flow For Sampling Period * Time = Sample Volume}$$

8.3 Calculation of Total Sample Volume for SVOC/OCP

The total flow volume calculation for SVOC proceeds as follows:

1. To calculate the time weighted average flow (Qr), enter the four Magnehelic flow check values into the regression equation of Qr versus the square root of the Magnehelic. This equation will give a time weight to each flow interval. With these values, calculate the average flow rate.

2. Calculate the average STP correction factor based on the average temperature and pressure during the sample period. Use the temperature and pressure data obtained from the CMP meteorological data at RMA.

3. Multiply Qr by the square root of the STP correction factor to yield the standardized flow rate (Qstd).

4. Multiply Qstd by the total elapsed time to yield the standardized total volume in SCM.

8.4 Calculation of Total Sample Volume for VOC and Mercury

The total flow volume calculations for VOC and mercury proceeds as follows:

1. Calculate the time weighted average flow (Qr) by entering the four rotameter flow check values into the regression equation of Qr versus the converted rotameter reading. This equation will give a time weight to each flow interval. Calculate the average flow rate based on these values.

2. Calculate the average STP correction factor based on the average temperature and pressure during the sample period. Use the temperature and pressure data obtained from the CMP meteorological data at RMA.

3. Multiply Qr by the square root of the STP correction factor to yield the standardized flow rate (Qstd).

5. Multiply Qstd by the total elapsed time to yield the standardized total volume. Convert from SCC to SCM.

9.0 REAL-TIME VENT AND CAP MONITORING

9.1 Monitoring Frequency/Criteria

The waste pile vents, Pond A vents and tank farm vents are sampled on a monthly basis during the summer of 1989 and quarterly thereafter. Monitoring is done only on days when the atmospheric pressure is dropping and continues to drop throughout the monitoring survey.

Monitoring of the waste pile cap and the restored Basin F is performed on a monthly basis during the summer of 1989 and quarterly thereafter. Locations which register values of 1 ppm or above will be designated as "hot spots". Hot spots (if any) are monitored weekly throughout the summer to determine if the location of the hot spot is drifting.

Note: When monitoring any location which may be giving off noxious fumes or strong odors, stay upwind to reduce exposure. Rubber gloves should be available in case any instruments contact contaminated liquids, and must be subsequently handled. When monitoring the Basin F liquid storage tanks, the tank roof should be considered a hazardous area, and should not be climbed or walked on.

9.2 Monitoring Locations

Sand bags have been aligned in rows which run roughly east to west across the waste pile and restored basin. These rows are approximately one hundred feet apart on the waste pile, with sand bags approximately fifty feet apart along the rows. The rows are approximately two hundred fifty feet apart on the restored basin, with sand bags approximately 100 feet apart along these rows. The sand bags are tagged according to row and position number. The person performing the sampling traverses the waste pile and restored basin on foot, monitoring continuously, following the aligned sand bags. Data is recorded every one hundred (100) paces along the transect. Refer to Figures 9-1 through 9-3 for vent and cap and tank monitoring locations.

9.3 Calibration Procedures

The calibration of the real-time monitoring equipment is required immediately before and immediately after monitoring to ensure valid data. Adjustment of the sensor settings in the field would invalidate data and must be avoided. In some situations a high concentration at one site may cause excessive contamination of filters in the sensor, resulting in persistently high readings even at sites with known low concentrations. If this situation arises, changing filters in the field is permissible, as long as all actions are properly documented on the field data sheets. Extra filters should be available during the survey, especially if high readings are anticipated.

If the post sampling calibration results are found to be acceptable, the sampling data are considered valid. A forced postsampling calibration, i.e.: changing filters or making internal adjustment during calibration, invalidates the data.

9.3.1 OVA 128GC Calibration

9.3.1.1. Preliminary Procedures

1. Turn to Figure 2, page 2 of the OVA manual for an illustration of the sensor.

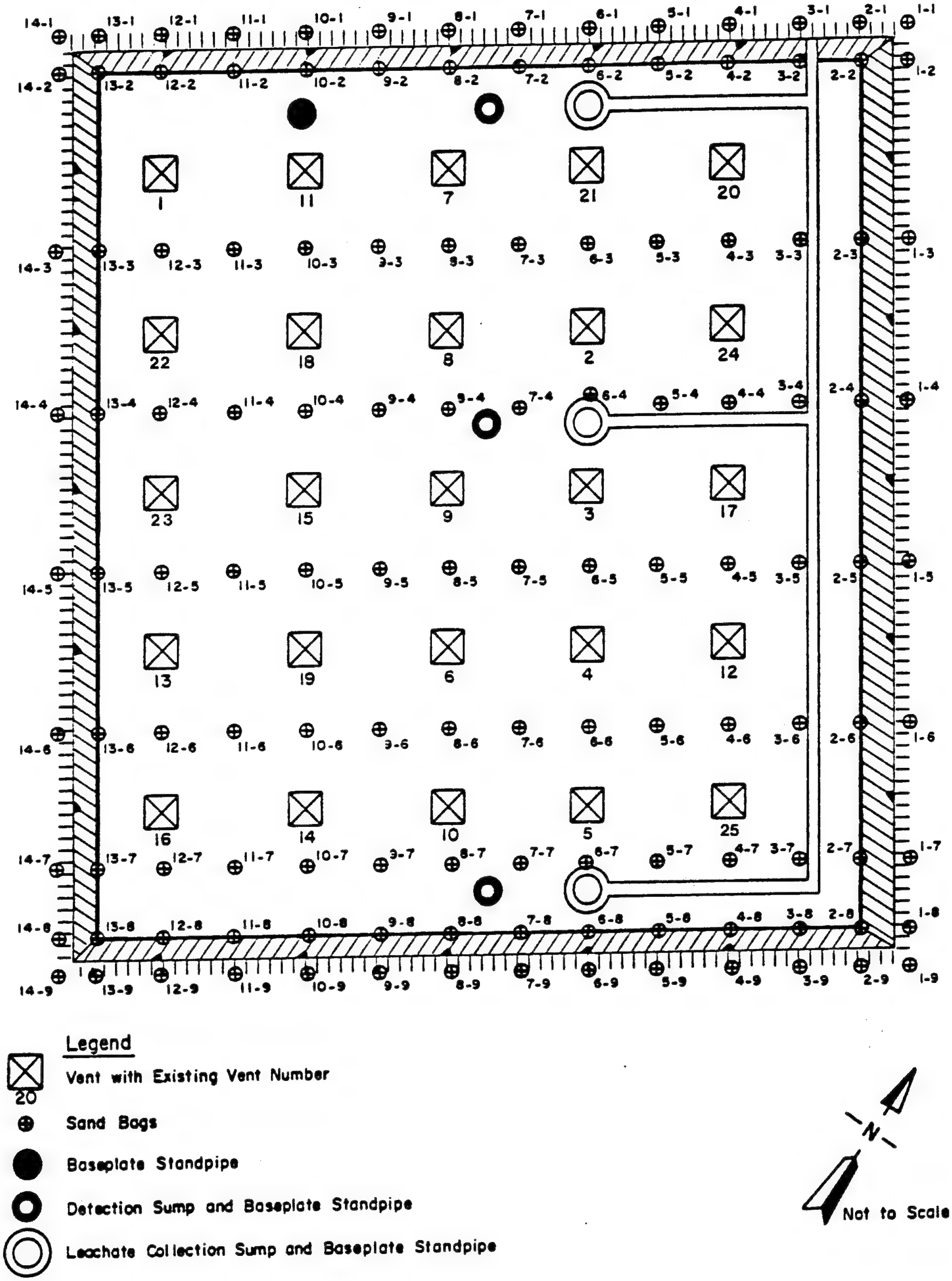


Figure 9-1 Waste Pile Vent and Cap Real-Time Monitoring Locations

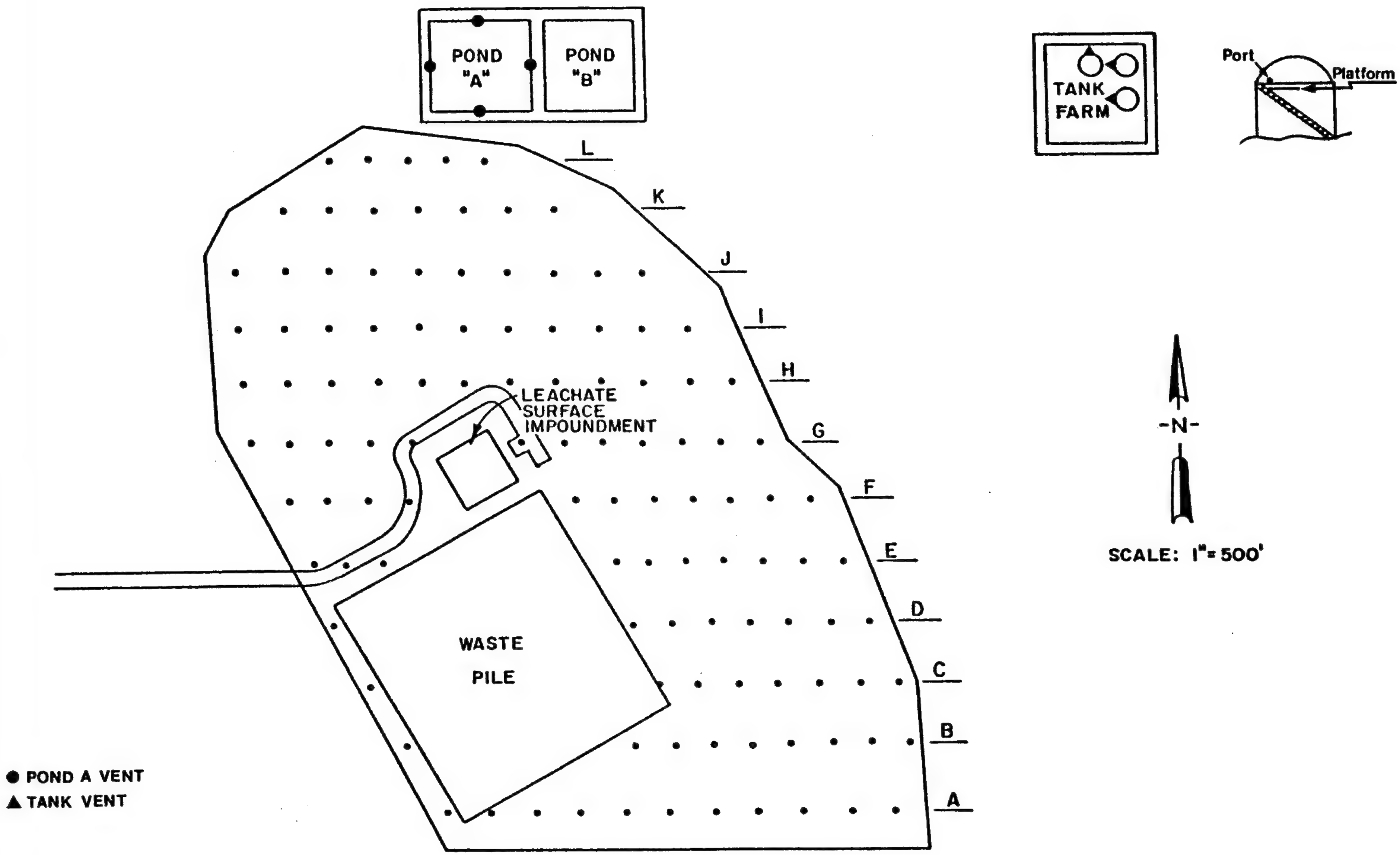
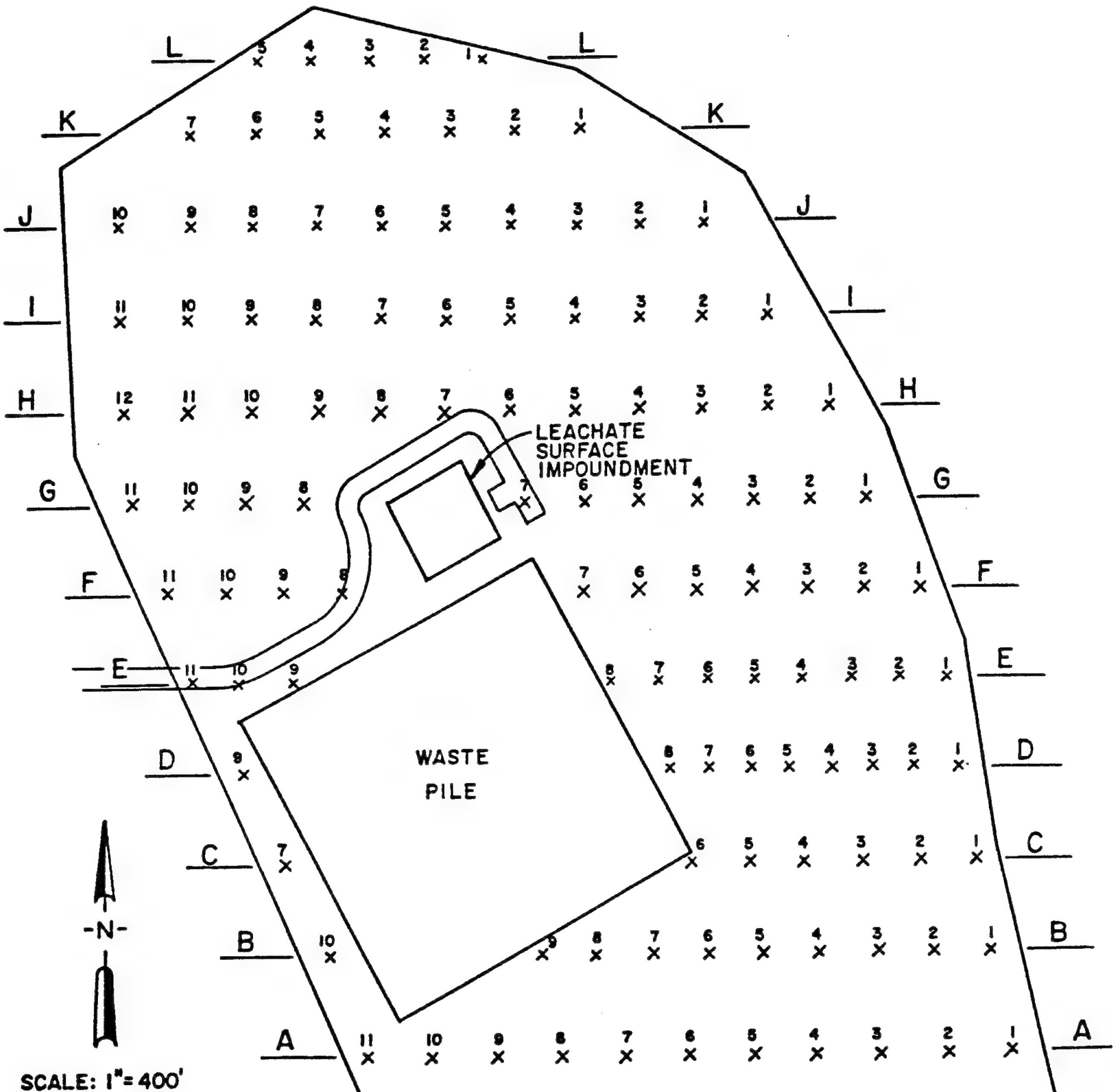


Figure 9-2 Sample Locations for Pond A, Tank Farm and Restored Basin F Floor



9
X Sandbag

Figure 9-3 Locations of Sandbags for Real-Time Monitoring of Basin F Floor

2. Move the instrument switch to BATT to assure the battery is fully charged and ready for use.

3. Turn the instrument switch to ON. Allow a 5 minute warm-up period.

4. Turn the hydrogen valve on and read the hydrogen tank psi indication to be sure there is enough hydrogen to complete the planned survey. Approximately 150 psi is required for each hour of operation.

5. Set the Span control to 300.

6. Turn the pump switch to the ON position.

9.3.1.2 <u>Calibration Procedures</u>

1. Open the hydrogen supply valve and observe the reading on the hydrogen supply indicator. The gauge should read between 8 and 12 psi. Wait one minute.

2. Set the calibration switch to the X1 mode.

3. Depress the IGNITER BUTTON (Figure 2, page 2 of the OVA manual) until the hydrogen flame ignites (do not depress the igniter button more than 6 seconds at a time). If the hydrogen does not ignite, release the button and try again. When ignition occurs the needle on the probe assembly meter will travel upscale to read total organic vapors.

4. After the unit is ignited, set the calibration switch to the X10 mode. Using the adjust knob, zero the probe meter needle.

5. Connect the probe to a known gas standard (usually CH_4). The meter needle should travel upscale to the required ppm (normally 90 ppm). The acceptable calibration accuracy range is $\pm$ 10 % (or 81 to 99 ppm). If this ppm target is not obtained, the primary filter (page 15 of the OVA manual) and/or the secondary panel mount filter (page 15 of the OVA manual) may require cleaning or replacement because of contamination.

6. If the unit still does not calibrate after this maintenance, an inner calibration (page 12, column 2 of the OVA manual) may be performed. If the unit continues to fail, send it in for repair.

7. Once the unit is calibrated, set the calibration switch to the X1 mode. Use the adjustment knob to return the probe meter needle to zero.

   a. If a background reading is desired, connect zero air to the probe and zero the meter needle as before. Remove the zero air and read the meter for ambient air background. Any readings above zero will be the background. Subtract this background value from any subsequent real-time readings.

   b. If a background reading is not desired, return the meter needle to zero while sampling the ambient air, after calibration with the 90 ppm calibration gas.

9.3.1.3 <u>OVA Presampling Calibration Documentation</u>

After the calibration of the unit is complete, document the following:

1. Serial number of the unit.

2. Time unit was turned on.

3. Battery check reading.

4. Span control setting (normally 300).

5. Calibration gas standard in ppm (Calibrate with 90 ppm CH_4 at 90 ppm).

6. Initial reading (IR 90).

7. Time of calibration (0700 MST.).

8. Operator's initials (JDG).

9. Date

9.3.1.4 <u>OVA Postsampling Calibration Documentation</u>

At the end of the monitoring survey, recalibrate the unit with the gas standard. If the unit does not fall within the $\pm$ 10% (81 to 99 ppm) range for the gas standard, the survey readings must be voided. The following data are required to validate the survey readings:

1. Serial number of the unit.

2. Battery check reading.

3. Span control setting.

4. Calibration gas standard in ppm (Calibrate with 90 ppm CH_4 at 90 ppm).

5. Initial Reading (IR 90 ppm).

6. Time of calibration (1530 MST).

7. Operator's Initials (JDG).

8. Date.

9.3.2 <u>H-Nu P1 101 Calibration</u>

9.3.2.1 <u>Preliminary Procedures</u>

1. Turn function switch to STANDBY (Figure 2-1, page 2-2 of the H-Nu manual) and allow the unit to warm up for 30 minutes before calibrating.

2. Turn the function switch to BATT (Figure 2-1, page 2-2 of the H-Nu Manual). The meter needle will read in the green zone of the scale if the battery is fully charged. If it does not show a full charge, stop the calibration and charge the unit for 10 to 12 hours.

3. Turn the function switch back to STANDBY. Check the span control to be sure it is on the desired value (normally 9.8) for the probe and calibration gas being used.

4. While in STANDBY be sure the meter needle is resting on zero. If it is not, adjust the meter needle to zero using the zero adjustment knob.

9.3.2.2 Calibration Procedures

1. Turn the function switch to the 200 range (Figure 2-1, page 2-2 of the H-Nu Manual).

2. Connect the probe to a regulator mounted on a gas cylinder of known concentration ,normally 100% isobutylene is used to calibrate to 55 ppm. (Figure 3-1, page 3-5 of the H-Nu manual.)

3. Open the regulator valve. The meter needle should register in the direction of the required ppm. Adjust the span control to set the meter needle at the required ppm value. An acceptable calibration is ± 10% of the required ppm (50 ppm to 60 ppm).

4. If calibration within the ± 10% (50 ppm to 60 ppm) cannot be achieved, it may be necessary to clean the lamp (normally a 10.2 EV see section 5-2 H-Nu manual), and then repeat steps 1, 2 and 3. Do not adjust the trimpot R48 to achieve the desired ppm reading (page 5-3 H-Nu manual). If the desired ppm cannot be obtained after the lamp has been cleaned, send the unit in for repair.

9.3.2.3 H-Nu Presampling Calibration Documentation

Once calibration of the unit is complete, document the following:

1. Date.

2. Serial number of the unit.

3. Time the unit was turned on.

4. Battery check reading.

5. Span control setting.

6. Calibration gas standard in ppm (Calibrate with 100% isobutylene at 55 ppm).

7. Initial reading (IR 55 ppm).

8. Time of calibration (0700 MST).

9. Operator's Initials (JDG).

9.3.2.4 H-Nu Postsampling Calibration Documentation

At the end of the monitoring survey recalibrate the unit. If the unit does not fall within the ± 10% range (50 ppm to 60 ppm) of the original calibration (55 ppm), the monitoring data must be voided. A forced postsampling calibration, i.e.: cleaning the lamp or adjusting the trimpot R48 during calibration, would invalidate the data.

The following data are required to validate the survey readings.

1. Date.

2. Serial number of the unit.

3. Battery reading.

4. Span control setting.

5. Calibration gas standard in ppm (Calibrate with 100% isobutylene at 55 ppm).

6. Initial reading (IR 55 ppm).

7. Time of calibration (1530 hrs.).

8. Operator's Initials (JDG).

9.3.3 Neotronics EXTOX Gas Monitor Calibration

The manufacturer recommends that the Extox unit be sent to the factory every 6 months for calibration. Factory calibration is performed following the procedures described below. The manufacturer has stated that there is no reason to return the unit to the factory for calibration provided these procedures are followed using the proper calibration kit.

9.3.3.1 Preliminary Procedures

1. Depress the orange power switch (top of unit) to activate the unit. Allow 5 minutes for the unit to warm up.

2. Check battery condition, if the battery is low, it will indicate BATT LOW in the digital display area. If BATT LOW is not displayed, the battery is good.

3. Verify that the calibration kit includes:

    a. Special screw driver (1).

    b. Allen wrench (1).

    c. Regulators with attached tygon tubing (2).

    d. Cylinder of methane (CH_4) at a concentration 1.5% to calibrate to 30% LEL (1).

    e. Cylinder of Hydrogen Sulfide (H_2S) to calibrate to 90 ppm (1).

    f. A black aspirator. The aspirator may be attached to the unit at the back plate recess, using a rubber band. Note: the round cutout in the aspirator is positioned at the top during calibration (1).

    g. Carry case (1).

4. Using the allen wrench, remove the 4 allen screws which secure the back plate. This allows access to the zero adjustment access port.

5. Attach one regulator to each gas cylinder.

6. Have the calibration log book available.

9.3.3.2 <u>Calibration Procedures for the Oxygen Sensor</u>

1. Calibrate the unit outdoors or under a vented hood. The digital meter on top should be in the OXY mode.

2. Removal of the back plate allows access to the OXY span slot (located in the upper left hand corner of the zero adjustment access port). Insert the special screw driver into the Oxy slot, and turn it (clockwise or counter clockwise) to adjust the digital readout to 20.9%. Allow the instrument to stabilize for one minute. Calibration is completed.

9.3.3.3 <u>Calibration of the H_2S Sensor</u>

1. Push the select button, located on top of the unit, down once. The digital readout should display "Tox 0 ppm".

2. If other than 0 ppm appears, insert the screwdriver into the Tox zero slot, (located in the lower right hand corner of the zero adjustment access port).

3. Turn the screwdriver (clockwise or counter clockwise) to adjust the digital meter to 0 ppm. Allow the instrument to stabilize for one minute.

4. Attach the black aspirator to the back of the unit, using the rubber band.

5. Attach tygon tubing from the H_2S cylinder to the port on the <u>right</u> side of the black aspirator.

6. Turn the H_2S regulator on. The reading of the digital meter should immediately increase. After 3 minutes, the digital read out should be 90 ppm. If it is not, insert the screwdriver in the Tox span slot, centered at the top of the black aspirator. Turn the screwdriver (clockwise or counter clockwise) until the digital meter reads 90 ppm. Allow the unit to stabilize for one minute.

7. Turn the gas regulator off and disconnect the tygon tubing. Remove the regulator from the H_2S cylinder. Calibration is complete.

8. A reading of $\pm$ 1 ppm (89 ppm to 91 ppm) is considered within calibration.

9. If the digital readout cannot be adjusted to 90 ppm, the H_2S sensor must be replaced.

9.3.3.4 <u>Calibration of the EXP Sensor</u>

1. Push the select button, located on top of the unit, down 3 times until EXP 0% appears on the digital readout.

2. If a reading other than 0% appears, remove the black aspirator, and insert the screwdriver in the EXP zero slot (located in the lower right hand corner of the zero adjustment access port, just left of the EXP span slot).

3. Rotate the screwdriver (clockwise or counter clockwise) to adjust the digital meter reading to 0%. Allow the instrument to stabilize for one minute.

4. Reattach the black aspirator to the back of the unit. Attach the tubing from the CH_4 regulator to the <u>left</u> port on the back of the aspirator.

5. Turn the EXP regulator on. The digital meter reading should immediately increase. After 3 minutes the digital meter should read 30%. The reading must be within ± 1% (29% to 31%) for the instrument to be calibrated. If the digital readout does not show the target value, insert the screwdriver into the EXP span slot and adjust the reading to 30%. Allow the instrument to stabilize for one minute. Calibration is complete.

6. If the 30% reading cannot be achieved by adjustment, clean the Exp sensor (brass colored rectangle in lower left corner) with a wire brush and alcohol. Allow the sensor to dry for two days, then attempt calibration again. Note: If the calibration target cannot be achieved, the EXP sensor must be replaced.

7. Turn EXP cylinder off, remove tygon tubing from aspirator, remove regulator from cylinder, remove aspirator and reattach the backing plate to the unit.

9.3.3.5 <u>EXTOX Presampling Calibration Documentation</u>

After calibration of the unit is complete, document the following:

1. Serial number of the unit.
2. Time the unit is turned on.
3. Battery check (note battery good or Low).
4. Oxygen meter reading.
5. Calibration gas standard in ppm (H_2S to 90 ppm).
6. Initial reading (IR 90 ppm).
7. Calibration gas standard to % (CH_4 to 30%).
8. Initial reading (IR 30%).
9. Time of calibration (0700 MST) .
10. Operator's Initials. (FK).
11. Date.

9.3.3.6 <u>EXTOX Postsampling Calibration Documentation</u>

At the end of the monitoring survey, recalibrate the unit. If the unit does not fall within ± 1%, or ± 1 ppm, of the required values for the gas sensors, the unit is not in calibration and all survey readings must be voided. Document the following:

1. Serial number of the unit.
2. Battery check (note battery good or low).
3. Calibration gas standard to ppm (H_2S to 90 ppm).

4. Initial reading (IR 90 ppm).

5. Calibration gas standard to % (CH_4 to 30).

6. Initial reading (IR 30%).

7. Time of calibration (1530 MST).

8. Operator's initials (FK).

9. Date

9.4 Monitoring Procedures

9.4.1 Monitoring Pond A Vents

The OVA and Hnu are used for real-time monitoring. Begin the survey with the OVA in the X1 mode and the H-Nu on the 20 scale. If high concentrations are encountered, the OVA may be moved up to the X10 or X100 mode and the H-Nu may be moved up to the 200 or 2000 scale to allow accurate readings.

Hold the probe (OVA and H-Nu) within one inch of the vent opening. Slowly, move the probe all the way around the vent, watching the meter for movement or "hits". Record all data on the Basin F, Pond A and Tank Farm sampling data sheet (Figure 9-4). Complete the form and submit it to the Lakewood office within two days of the survey period. If vent readings equal or exceed 2 ppm, take breathing zone samples three feet downwind from the vent and record the results in the comment section of the sampling data sheet. Report any breathing zone readings of 5 ppm or more to the Program Manager and the Safety Officer. Take breathing zone readings downwind from Pond A and record the locations and concentrations on the sampling data sheet. These readings should be taken outside the fenced area.

9.4.2 Monitoring Storage Tank Vents

The OVA and H-Nu are used for real-time monitoring. An eight (8') foot pole, with tygon tubing attached, is utilized to reach the vents on top of the tanks. The tygon tubing fits snugly over the OVA and H-Nu probes.

Begin the monitoring survey with the OVA in the X1 mode and the H-Nu on the 20 scale. If high concentrations are encountered, the OVA may be moved up to the X10 or X100 mode and the H-Nu may be moved up to the 200 or 2000 scale to allow accurate readings. Use the Basin F, Pond A and Tank Farm sampling data sheet (Figure 9-4) to record tank vent readings.

When monitoring, put the extension probe next to the vent, under the vent hood. Move the probe very slowly all the way around the vent while watching the meter for movement or "hits". Record all data on the Basin F Tank Farm sampling data sheet and submit it to the Lakewood office within two days of the survey period.

Note: The OVA has an accuracy of ± 20% on the X1, X10 and X100 modes, with temperatures ranging from 10°C to 40°C (50°F to 104°F) and with relative humidity of 5% to 95%. The H-Nu operating temperature is -10°C to 40°C (14°F to 104°F) with a relative humidity up to 90%.

Caution: Sampling should be done from the sampling platform at the top of the tank steps. Walking on or standing on the tank roof may be hazardous.

rised 5-26-89

Figure 9-4 Real-Time Data Sheet

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: 08/24/89 SAMPLER: Jack D Grant

TIME: 1250 MST

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 1.8	OVA 2.8	OVA 200	OVA 70
HNU 0.2	HNU 2.2	HNU 110	HNU 7.0

WIND SPEED ~~E~~ 9 mph

ZONE E-2 WIND DIRECTION EEN OVA 0.0 HNU ·0.0
(SAMPLE DOWN WIND OF POND-A)

TEMPERATURE 89 °F

ADDITIONAL COMMENTS:

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 08/24/89 SAMPLER: Jack D Grant

START TIME: 1330 MST START ATMOS. PRESS.: 24.55 WS: 9 mph WD: EEN TEMP: 89

FINISH TIME: 1415 MST FINISH ATMOS. PRESS.: 24.49 WS: 10 mph WD: EEN TEMP: 89

WEST TANK	EAST TANK	SOUTH TANK
OVA 6.7	OVA 6.6	OVA 5.3
HNU 1.5	HNU 1.3	HNU 0.7

Calibrations for: OVA 50990, and HNU 801169, are on page 16 of the CAL logbook CMP 1 dated 8/24/89.

ADDITIONAL COMMENTS:

9.4.3 Monitoring Waste Pile Vents

The OVA 128 and H-Nu P1 101 are used as real-time organic vapor analyzers. Hydrogen sulfide is monitored using the Extox Gas monitor, and ammonia is monitored with the Sensidyne Gastec Pump. Monitoring begins with the OVA in the X1 mode and the H-Nu on the 20 scale. If high concentrations are encountered, the OVA may be moved up to the X10 or X100 mode and the H-Nu may be moved up to the
200 or 2000 scale to allow accurate readings. Record all waste pile vent readings on the Basin F Waste Pile Vents sampling data sheet, Figure 9-5.

Monitoring is done approximately one inch beneath the vent opening, on the downwind edge of the vent, during light or moderate winds (do not monitor on days the wind exceeds 10 mph), and directly under the vent during calm conditions.

The sampling data sheet titled "Basin F Waste Pile Vents" is completed and submitted to the Lakewood office within two days of the survey.

1. If organic vapor readings at the vents exceed 2 ppm, breathing zone readings are taken three feet downwind from the vent, and the results noted in the comment section of the sampling data sheet. If breathing zone readings equal or exceed 5 ppm, notify the Program Manager and the Safety Officer.

2. For any H_2S readings of 10 ppm or more taken at the vent, take breathing zone readings three feet downwind from the vent and record the results in the comment section of the sampling data sheet. Notify the Program Manager and the Safety Officer if breathing zone readings equal or exceed 10 ppm.

3. If ammonia readings are 25 ppm or more at the vents, take breathing zone readings three feet downwind from the vent and record in the comment section of the sampling data sheet. Notify the Program Manager and Safety Officer if breathing zone readings equal or exceed 25 ppm.

9.4.4 Monitoring Waste Pile Cap and Restored Basin

Real-time monitoring is done with the OVA 128 and H-Nu P1 101 instruments. The OVA and H-Nu may be used with the probes inserted into an extension tube, with a funnel attached to the end, to allow sampling while standing.

Pre- and postsampling calibration procedures for the OVA and H-Nu are conducted to verify that all data collected are valid. Data for the waste pile are recorded on the sampling data sheet titled "Basin-F Waste Pile Cap" (Figure 9-6). Data from the restored basin is recorded on the 2 page sampling data form titled "Basin-F Restored Basin" (Figure 9-7). Each sampling data sheet is completed and sent to the Lakewood office within two days of the survey period.

Monitoring is done on days when the wind speed is ten mph or less. Sand bags aligned in rows which run roughly east to west across the waste pile and restored basin mark the sampling area. These rows are approximately one hundred feet apart on the waste pile with sand bags approximately fifty feet apart along these rows. The rows are approximately two hundred fifty feet apart on the restored basin, with sand bags approximately 100 feet apart along these rows. The sand bags are tagged with respect to row and position number. The person conducting the sampling traverses the waste pile and restored basin on foot, following the aligned sand bags and monitoring continuously. The

data are recorded every one hundred (100) paces along the transect. The instrument probe inlet is held between two and three inches above the surface.

Begin the survey with the OVA in the X1 mode and the H-Nu on the 20 scale. If high concentrations are encountered, the OVA may be moved up to the X10 or X100 mode and the H-Nu may be moved up to the 200 or 2000 scale to allow accurate readings.

Any relatively high values observed on the continuous transect are recorded, using the nearest sand bag as the location mark. The extent of "hot spots" are recorded before returning to the transect. If values above five ppm are found, the field personnel marks the location and leaves the site immediately. The Program Manager and the Health and Safety Officer are notified immediately of such readings. These persons make a determination as to the next course of action.

Note: The OVA has an accuracy of plus or minus 20% on the X1, X10 and X100 modes, with a temperature range of 10°C to 40°C (50°F to 104°F), and with relative humidity up to ninety-five percent (95%). The H-Nu operating temperature range is -10°C to 40°C (14°F to 104°F) with a relative humidity up to ninety percent (90%).

9.5 <u>Summa Canister Sampling of Storage Tanks, Pond A and Waste Pile Vents</u>

Summa sampling sites were selected based on previously recorded real-time H-Nu and OVA readings taken at the Basin F waste pile vents and Pond A vents. Canister sampling is performed on tank farm vents and Pond A vents alternately with Basin F waste pile vents. In addition to the Summa canisters, real-time H-Nu and OVA readings are recorded. Ammonia (NH_3) and hydrogen sulfide (H_2S) colormetric tubes are also used for sampling at these sites.

Stainless steel 6 liter Summa passivated canisters are used for this type of sampling. These canisters have been prepared at the laboratory, and tested at a vacuum pressure of 30" Hg, before being shipped to the site. Ebasco personnel sample the prescribed sites when acceptable meteorological conditions are present. While calm to moderate winds and dropping atmospheric pressure constitute ideal sampling conditions, dropping pressure is only required for waste pile vent sampling. Sampling events alternate between tank farm vents and Pond A vent sampling, and waste pile vent sampling.

Typically, during the course of this sample regimen, five Summa canisters are received from the laboratory on a monthly basis. As soon after receipt of the prepared canisters as acceptable atmospheric conditions develop, sampling of the designated location(s) commences. Waste pile vents 5, 9, 20 and 23 were designated as the waste pile sample sites. Refer to Figure 9-1 for waste pile vent sample sites. The three Basin F liquid storage tanks are sampled at the sample ports located above the liquid level of the tanks, accessible from the tank stairways. These storage tanks are designated as Tank 1 (NW), Tank 2 (NE), and Tank 3 (SE). The Pond A vent sampled is either the south or the east vent,

depending on emissions indicated by real-time monitoring. Refer to Figure 9-2 for tank and Pond A vent sample locations.

<u>Equipment Required</u>

Barometer
Thermometer
Vacuum Gauge (Supplied by Enseco with Summa canisters)
OVA
H-Nu

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE VENTS

Figure 9-5 Real-Time Data Sheet

DATE: July 16-1990 SAMPLER: [illegible signature]

START TIME: 1120 MST START ATMOS. PRESS.: 24.70 WS: 0-5 mph WD: E to W TEMP: 85 °F

END TIME: 1235 MST END ATMOS. PRESS.: 24.68 WS: 2-7 mph WD: E to W TEMP: 85 °F

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop throu out the sample period. Take sample 1" below vent opening.

Location	OVA	HNU	H2S	NH3
VENT #: 1	6.8	0.2	—	-0-
VENT #: 11	0.6	0.0	—	-0-
VENT #: 7	1.2	0.0		
VENT #: 21	0.6	0.0	—	-0-
VENT #: 20	7.2	0.1	—	-0-
SUMP #: 3 (Covered)	0.0	0.0	—	-0-
VENT #: 22	1.9	0.2	—	-0-
VENT #: 18	0.0	0.0	—	-0-
VENT #: 8	0.7	0.0		
VENT #: 2	0.0	0.0	—	-0-
VENT #: 24	0.2	0.0	—	-0-
SUMP #: 2 (Covered)	0.0	0.0	—	-0-
VENT #: 23	3.6	0.0	—	-0-
VENT #: 15	0.9	0.0	—	-0-
VENT #: 9	7.4	0.2		
VENT #: 3	1.8	0.1	—	-0-
VENT #: 17	0.0	0.0	—	-0-
SUMP #: 1	0.3	0.1	—	-0-
VENT #: 13	4.3	0.3	—	-0-
VENT #: 19	1.6	0.0	—	-0-
VENT #: 6	0.0	0.0		
VENT #: 4	0.9	0.0	—	-0-
VENT #: 12	0.1	0.0	—	-0-
VENT #: 16	14.0	0.2	—	-0-
VENT #: 14	0.0	0.0	—	-0-
VENT #: 10	0.0	0.0		
VENT #: 5	6.4	0.1	—	-0-
VENT #: 25	2.4	0.1	—	-0-

NT = NOT TAKEN
NA = NOT AVAILAB

Calibrations for: OVA 50990, HNU 801143, Exotox ——, and NH3 Hand Pump Cal at Factory are on page 036 of the CAL logbook Comp 1 dated 07-16-90.

ADDITIONAL COMMENTS: Top looks good - All weeds & grass mowed. No gassing spots noticed

ued 6-15-89

Figure 9-6 Real-Time Data Sheet

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE CAP

DATE: 14 August SAMPLER: Jack N Geist

START TIME: 1100 MST START ATMOS. PRESS.: 24.83 WS: 3 mph WD: SSW TEMP: 81 °F

END TIME: 1345 MST END ATMOS. PRESS.: 24.78 WS: 6 mph WD: SSW TEMP: 84 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-1
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.[illegible]
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.[illegible]

14-2	13-2	12-2	11-2	10-2	9-2	8-2	7-2	6-2	5-2	4-2	3-2	2-2	1-2
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O [illegible]
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H [illegible]

14-3	13-3	12-3	11-3	10-3	9-3	8-3	7-3	6-3	5-3	4-3	3-3	2-3	1-3
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.[illegible]
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H [illegible]

14-4	13-4	12-4	11-4	10-4	9-4	8-4	7-4	6-4	5-4	4-4	3-4	2-4	1-4
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O [illegible]
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.[illegible]

14-5	13-5	12-5	11-5	10-5	9-5	8-5	7-5	6-5	5-5	4-5	3-5	2-5	1-5
O [illegible]	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.[illegible]
H [illegible]	[illegible].0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H [illegible]

[illegible]	[illegible]	12-6	11-6	10-6	9-6	8-6	7-6	6-6	5-6	4-6	3-6	2-6	1-6
O 0.0	[illegible]	O [illegible]	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O [illegible]
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.[illegible]

14-7	13-7	12-7	11-7	10-7	9-7	8-7	7-7	6-7	5-7	4-7	3-7	2-7	1-7
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.[illegible]
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H [illegible]

14-8	13-8	12-8	11-8	10-8	9-8	8-8	7-8	6-8	5-8	4-8	3-8	2-8	1-8
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O [illegible]
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H [illegible]

14-9	13-9	12-9	11-9	10-9	9-9	8-9	7-9	6-9	5-9	4-9	3-9	2-9	1-9
O 0.0	0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O [illegible]
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H [illegible]

Calibrations for: OVA 50990, and HNU 801169 are on page 15 of the CAL logbook CMPL.

ADDITIONAL COMMENTS:

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

Figure 9-7 Real-Time Data Sheet - Restored Basin

DATE: 03-05-90 SAMPLER: [illegible]

START TIME: 1100 MST START ATMOS. PRESS.: 24.53 WS: 2mph WD: W→E TEMP: 45 °F

END TIME: 1345 MST END ATMOS. PRESS.: 24.45 WS: 3mph WD: W→E TEMP: 52 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

							L-5 O -0- H -0-	L-4 O -0- H -0-	L-3 O -0- H -0-	L-2 O -0- H -0-	L-1 O -0- H -0-
					K-7 O -0- H -0-	K-6 O -0- H -0-	K-5 O -0- H -0-	K-4 O -0- H -0-	K-3 O -0- H -0-	K-2 O -0- H -0-	K-1 O -0- H -0-
		J-10 O -0- H -0-	J-9 O -0- H -0-	J-8 O -0- H -0-	J-7 O -0- H -0-	J-6 O -0- H -0-	J-5 O -0- H -0-	J-4 O -0- H -0-	J-3 O -0- H -0-	J-2 O -0- H -0-	J-1 O -0- H -0-
	I-11 O -0- H -0-	I-10 O -0- H -0-	I-9 O -0- H -0-	I-8 O -0- H -0-	I-7 O -0- H -0-	I-6 O -0- H -0-	I-5 O -0- H -0-	I-4 O -0- H -0-	I-3 O -0- H -0-	I-2 O -0- H -0-	I-1 O -0- H -0-
H-12 O -0- H -0-	H-11 O -0- H -0-	H-10 O -0- H -0-	H-9 O -0- H -0-	H-8 O -0- H -0-	H-7 O -0- H -0-	H-6 O -0- H -0-	H-5 O -0- H -0-	H-4 O -0- H -0-	H-3 O -0- H -0-	H-2 O -0- H -0-	H-1 O -0- H -0-
	G-11 O -0- H -0-	G-10 O -0- H -0-	G-9 O -0- H -0-	G-8 O -0- H -0-	G-7 O -0- H -0-	G-6 O -0- H -0-	G-5 O -0- H -0-	G-4 O -0- H -0-	G-3 O -0- H -0-	G-2 O -0- H -0-	G-1 O -0- H -0-
	F-11 O -0- H -0-	F-10 O -0- H -0-	F-9 O -0- H -0-	F-8 O -0- H -0-	F-7 O -0- H -0-	F-6 O -0- H -0-	F-5 O -0- H -0-	F-4 O -0- H -0-	F-3 O -0- H -0-	F-2 O -0- H -0-	F-1 O -0- H -0-
	E-11 O -0- H -0-	E-10 O -0- H -0-	E-9 O -0- H -0-	E-8 O -0- H -0-	E-7 O -0- H -0-	E-6 O -0- H -0-	E-5 O -0- H -0-	E-4 O -0- H -0-	E-3 O -0- H -0-	E-2 O -0- H -0-	E-1 O -0- H -0-
			D-9 O -0- H -0-	D-8 O -0- H -0-	D-7 O -0- H -0-	D-6 O -0- H -0-	D-5 O -0- H -0-	D-4 O -0- H -0-	D-3 O -0- H -0-	D-2 O -0- H -0-	D-1 O -0- H -0-
					C-7 O -0- H -0-	C-6 O -0- H -0-	C-5 O -0- H -0-	C-4 O -0- H -0-	C-3 O -0- H -0-	C-2 O -0- H -0-	C-1 O -0- H -0-

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

Figure 9-7 Real-Time Data Sheet - Restored Basin

DATE: 03-05-90 SAMPLER: Jack Al Gest

	B-10	B-9	B-8	B-7	B-6	B-5	B-4	B-3	B-2	B-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	A-11	A-10	A-9	A-8	A-7	A-6	A-5	A-4	A-3	A-2	A-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

Calibrations for :OVA 50990, and HNU 801019, are on page 25 of CAL logbook book 1.

Additional Comments: Ground dry - did not smell any unusual odors. Restored Basin Area Cap lood good

O = OVA
H = HNU
S = Wind Speed
D = Wind Direction

Sensidyne colormetric sample pump
Stainless steel 6 liter Summa passivated canisters
10 foot, 1/8" diameter stainless steel tube
Tygon tubing extension tube, with stick, for OVA and H-Nu and colormetric tubes
Plastic bags: 13 gallon Glad kitchen garbage bags (if sampling Waste Pile Vents)
Tieback rope for sample port lid (if sampling Storage Tanks)
Stop Watch
Vacuum pump such as Gilian pump for line and gauge purging
Laboratory supplied "Chain-of-Custody and Field Data Record"

9.5.1 General Sampling Procedure

The H-Nu and OVA must be calibrated prior to commencement of sampling. Refer to Section 9.3 for calibration instructions. Section 9.4 presents instructions for H-Nu and OVA sampling procedures.

1. Upon arrival at the sampling site, set up the required sampling equipment.

2. If inserting a thermometer into a tank port or a vent, wrap the thermometer in a plastic bag to protect it, prior to positioning the instrument.

3. Position the stainless steel sample tubing where the sample is to be collected. Start the 10 minute line purge prior to connecting the tube to the canister. Perform steps 4 through 6 while sample line is purging.

4. Record meteorologic observations, noticeable odor observations and any other pertinent data.

5. Take and record real-time H-Nu and OVA readings, using the extension tube to sample at a point comparable to that of the canister sample.

6. Using the Sensidyne pump, and following the instructions accompanying the colormetric tubes, expose the ammonia (NH_3) and hydrogen sulfide (H_2S) sample tubes. Before pumping, insert the intake end into the extension tube which was positioned as described in step 5.

Note: The intake end of the tygon tubing extension and the intake end of the 10 foot stainless steel sample tube are positioned as follows: 1) For Basin F liquid storage tanks, the intake location is 1 to 3 feet above the liquid surface (Weston monitors tank liquid levels, and can provide that information upon request.); 2) Pond A vents are sampled about 3/4 inch inside the throat of the 2" vent; 3) waste pile vents are sampled at a point approximately 6" to 18" into the vent. Between samples, all sampling tubes are purged with ambient air, using a Gilian or other vacuum pump.

7. Connect the vacuum gauge, supplied by the laboratory, to the intake port on the canister. Connect the stainless steel sampling tube to the second intake port on the canister valve.

8. Read the initial vacuum from the vacuum gauge by opening the valve between the gauge and the canister, and record it on the laboratory supplied "Chain-of-Custody and Field Data Record" (Refer to Figure 9-8).

9. Open the second intake valve and allow the sample to flow into the canister for approximately 2 minutes. Close the intake valve when the vacuum pressure has dropped to approximately 4" Hg.

10. After completion of sample collection, remove the vacuum gauge from the canister. Purge the gauge rapidly 20 times with ambient air. This must be done prior to installation on another canister to prevent possible cross-contamination of samples.

In addition to the canister and real-time emissions monitoring performed at this time, an exhalation rate measurement is performed on the waste pile vents. This measurement is made by securing a 13 gallon polyethylene bag (trash bag) over the vent opening. The fill time is recorded, and a rough flow rate is calculated for each vent.

9.5.2 Shipping and Documentation

When the Summa passivated canisters are shipped from the laboratory, they are accompanied by pre-printed data record sheets, an inventory list and COC forms. These record sheets must accompany the canisters when they are returned to the laboratory for analysis. Additionally, identification/information tags attached to the canisters must be filled out and reattached to the appropriate canisters. Copies of all records must be made and distributed to the appropriate personnel and files. Refer to Figures 9-9 through 9-11 for illustration of inventory sheet, chain-of-custody record and identification tags.

9.6 Flux Chamber Sampling

Flux chamber measurements on the restored Basin F and the waste pile are performed by contract personnel from AeroVironment. The actual sampling site locations have been determined by Ebasco personnel, and are prepared in advance of AeroVironment's arrival at the site. Data from flux chamber tests are reported to Ebasco upon completion of laboratory analysis.

9.6.1 Sample Preparation

A typical flux chamber sampling episode starts with preparation of the sample sites a few days prior to the planned sampling date. (Refer to Figure 9-12 for flux chamber sample site locations.) Ebasco technicians visit each site and trim any resident vegetation to a height of one to three inches. Each sample pad is then covered with a two foot tall, A-frame supported plastic tent. This tent keeps the soil at the site to remain dry, while allowing any emissions to continue un restricted, until the sample collection commences. The plastic tents are removed by Ebasco personnel approximately one hour prior to commencement of sample collection.

AeroVironment ships equipment, including flux chambers (flux boxes) and Summa canisters, to the site in advance of sampling. These are calibrated, cleaned with absolute methanol, and any maintenance required is performed on site just prior to sampling. All flow measuring devices are calibrated on site using previously calibrated mass flow meters.

9.6.2 Sample Collection

Sample collection usually spans two days; three sample sites are sampled each day. A total of eight volatile organic compounds (VOC) and eight semivolatile organic compounds (SVOC) samples are taken. These include six sets of normal samples, one set of collocated duplicate samples, and one set of field blanks.

Soil temperatures are measured to a depth of six inches, then the flux boxes are set into the ground, using a rotating motion, to a depth of approximately one inch. The flux boxes are pressurized with ultra zero grade air to assure that a slight positive pressure (0.05" water) is maintained throughout sample collection. Volatile organic compounds are collected in Summa passivated stainless steel canisters. Semivolatile organic compounds are collected in polyurethane foam plugs (PUF traps). Both samples at each site draw gases from inside the flux box. The duration of each sample collection period is approximately 3 hours. When sampling has been completed, the samples are shipped by overnight express carrier to the analytical laboratory.

At the time of sampling, Ebasco personnel accompanying AeroVironment personnel record additional data at each site. Soil temperatures are measured at depths of two and six inches below the surface. H-Nu and OVA readings are recorded at ground level, and at the opening of each adjacent vent. Wind speed and direction are recorded, along with cloud cover and soil moisture conditions. Any noticeable odors detected at a site were also recorded.

Enseco

Canister Chain of Custody and Field Data Record (Grab Samples)

Client Ebasco

Page 2 of 5

Canister Serial # A-043

Date Cleaned 4/12/90

1) Initial vacuum check of canister	30 inches of Hg vacuum	Date 4/13/90	Initials ff
2) Field vacuum check before sampling	24 inches of Hg vacuum	Date 04 19 90	Initials MAC
3) Final vacuum/pressure after sampling	4 inches of Hg vacuum	Date 041990	Initials MAC
4) Final vacuum/pressure after receipt by lab	inches of Hg vacuum	Date	Initials

Relinquished By:	Received by:	Date / Time
[illegible signature]	Fed Ex	4/13/90 - 4:00pm
Fed ex	Mitchell A. Campo	4/17/90 1100
Mitchell A. Campo	FedEx	042390 1600
Fed Ex		

Note: Numbers 1 & 4 are completed by Enseco Lab personnel

CDFR1

Enseco, Inc. - Air Toxics Laboratory
9537 Telstar Avenue, Suite 118 ● El Monte, CA 91731
(818) 442-8400 ● FAX: (818) 442-3758

Enseco

SAMPLING EQUIPMENT RECORD

Date 6-15-90 Page ___ of ___

Client Ebasco Environmental Project Manager Bruce McDonald

Address 143 Union Bld, Ste. 1010 Telephone No. 303-980-2517

Lakewood, Co 80228-1824 Sampler(s) Geist, Campo, Kutchereiter, Huston, Wolz

Canister Type	Serial No.	Date Ret'd	Conditions & Initials	Description	Serial No.	Date Ret'd	Conditions & Initials
GRAB	A-010			1 Guage	G-011		
	A-064						
	A-039						
	A-017						
	A-043						

Signed out by: [signature] (Enseco) Date/Time 6-15-90 5pm

Received by: Karl Huston (Client) Date/Time 6-15-90 1200

Returned by: Karl Huston (Client) Date/Time 6-19-90 1600

FSER

Enseco, Inc. - Air Toxics Laboratory
9537 Telstar Avenue, Suite 118 • El Monte, CA 91731
(818) 442-8400 • FAX: (818) 442-3758

Figure 9-10 Summa Canister COC

Enseco

☐ 7440 Lincoln Way, Garden Grove, CA 92641, (714) 898-6370
☐ 2810 Bunsen Ave., Unit A Ventura, CA 93003, (805) 650-0546
☐ 2325 Skyway Dr., Unit K, Santa Maria, CA 93455, (805) 922-2776
☒ 9537 Telstar Ave., Unit 118, El Monte, CA 91731, (818) 442-8400
☐ Mobile Labs, (800) ENSECO-8

CHAIN OF CUSTODY RECORD

Date 2-8-90 Page 1 of 1

Lab Number

CLIENT Ebasco

ADDRESS Rocky Mountain Arsenal - South Plant Trailer 72nd and Quebec Streets, Commerce City CO 80022

PROJECT NAME IRA-F

CONTRACT / PURCHASE ORDER / QUOTE # USAA 8864.229

PROJECT MANAGER Bruce Macdonald

PHONE NUMBER 303-288-2930/2934

SITE CONTACT Karl Huston

ANALYSES: As per purchase order

Sample No. / Identification	Date	Time	Lab Sample Number	Sample Type: LIQ.	Sample Type: AIR	Sample Type: SOLID	No. of Containers	As per purchase order							Sample Condition/ REMARKS
A-001/20/90039	2-8-90	1210			X		1	X							N/A
A-010/5/90039	2-8-90	1219			X		1	X							N/A
A-035/20/90039	2-8-90	1209			X		1	X							N/A
A-061/33/90039	2-8-90	1236			X		1	X							N/A

KH 2-8-90

SAMPLERS: (Signature) Karl Huston

Received by: (Signature) Federal Express — Date 2-8-90 — Time 1700 MST

Relinquished by: (Signature)

Received by: (Signature) — Date — Time

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Enseco Terms and Conditions, unless a contract or purchase order has been executed and is cited above.

Relinquished by: (Signature) — Date — Time — Received for Laboratory by: — Date RECEIVED Time — Date ACCEPTED Time

Method of Shipment: Federal Express (Airbill # 1018014093)

Special Instructions: None

SAMPLE DISPOSITION:
1. Storage time requested: N/A days
(Samples will be stored for 30 days without additional charges; thereafter storage charges will be billed at the published rates.)
2. Sample to be returned to client: Y N
(Enseco will dispose of unreturned samples at no extra charge. Disposal will be by incineration wherever possible; otherwise, as appropriate, according to legal requirements.)

DISTRIBUTION: White with report, Yellow to Enseco, Pink to Courier, Gold to Sample Control

Figure 9-11 Summa Canister Tags

LOCATION *Tank #3 (Southeast)* *4-23-90*
DATE SAMPLED *4/20/90* SAMPLER *Huston, Campo, ~~Kutchenreiter~~ Geist KH*
INITIAL ~~PRESSURE~~ *VACUUM* *25* FINAL ~~PRESSURE~~ *VACUUM* *3* (psig)
COMMENTS *Canister A-046 Analyze per chain of custody instructions*
DATE CLEANED *4/12/90* VAC. CHECK *4/13/90*

LOCATION *Pond A South Vent*
DATE SAMPLED *4/19/90* SAMPLER *Huston, Campo, Kutchenreiter, Geist*
INITIAL ~~PRESSURE~~ *VACUUM* *24* FINAL ~~PRESSURE~~ *VACUUM* *4* (psig)
COMMENTS *Canister A-017. Analyze per chain of custody instructions*
DATE CLEANED *4/12/90* VAC. CHECK *4/13/90*

LOCATION *Tank #1 (Northwest) - Primary*
DATE SAMPLED *4/19/90* SAMPLER *Huston, Campo, Kutchenreiter, Geist*
INITIAL ~~PRESSURE~~ *VACUUM* *25* FINAL ~~PRESSURE~~ *VACUUM* *4* (psig)
COMMENTS *Canister A-018. Analyze per chain of custody instructions*
DATE CLEANED *4/12/90* VAC. CHECK *4/13/90*

LOCATION *Tank #2 (Northeast)* *4-23-90*
DATE SAMPLED *4/20/90* SAMPLER *Huston, Campo, ~~Kutchenreiter~~ Geist KH*
INITIAL ~~PRESSURE~~ *VACUUM* *25.5* FINAL ~~PRESSURE~~ *VACUUM* *4* (psig)
COMMENTS *Canister A-035 Analyze per chain of custody instructions*
DATE CLEANED *4/12/90* VAC. CHECK *4/13/90*

LOCATION *Tank #1 (Northwest) - Collocated*
DATE SAMPLED *4/19/90* SAMPLER *Huston, Campo, Kutchenreiter, Geist*
INITIAL ~~PRESSURE~~ *VACUUM* *24* FINAL ~~PRESSURE~~ *VACUUM* *4* (psig)
COMMENTS *Canister A-043 Analyze per chain of custody instructions*
DATE CLEANED *4/12/90* VAC. CHECK *4/13/90*

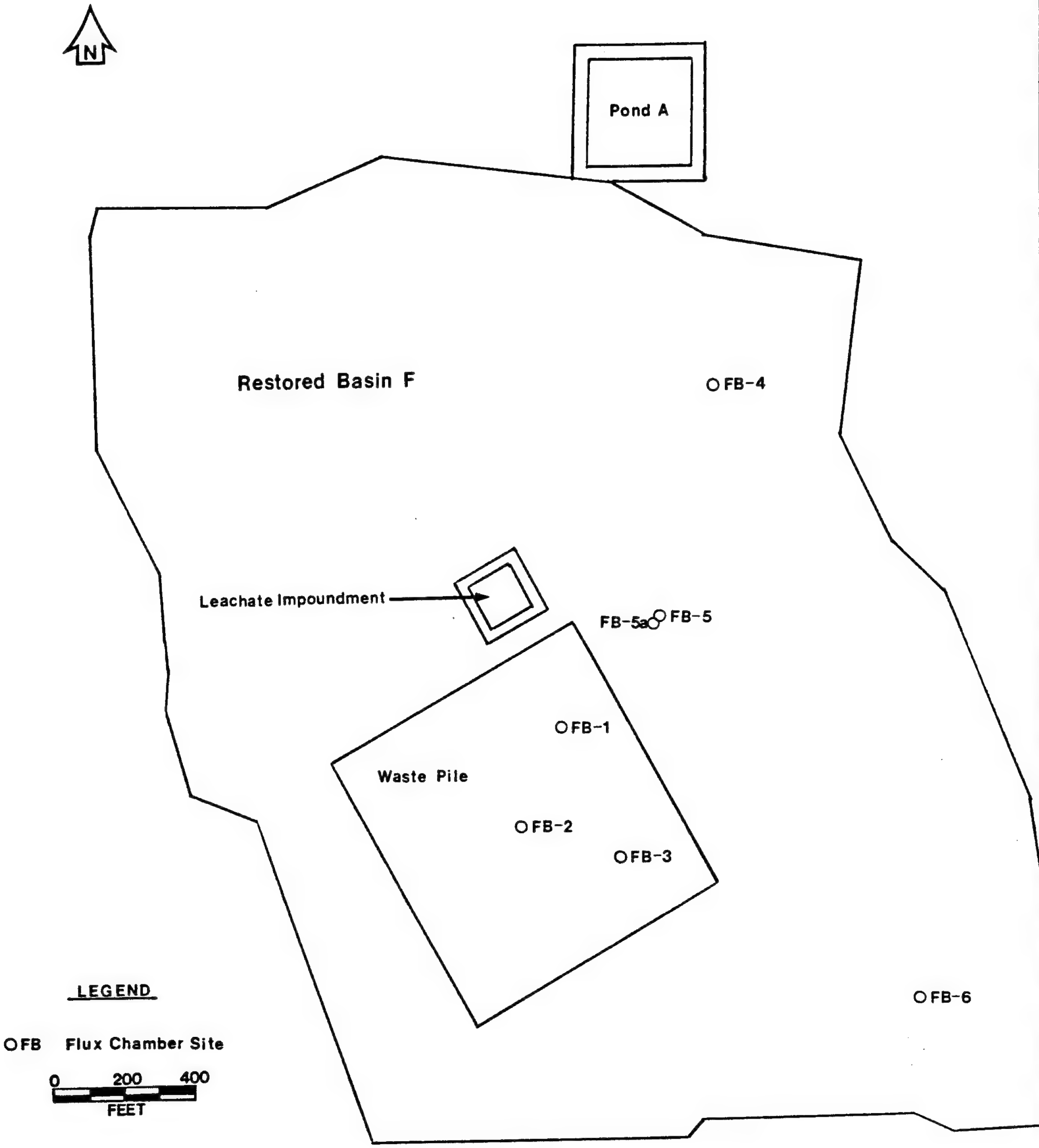


Figure 9-12 Flux Chamber Sample Sites

Appendix B

Sample Data Listings

Appendix B-1

Odor Program Data Listings

Ebasco Services Incorporated
TSP Concentrations.

IRA-F Program
All values are in micrograms per standard cubic meter.

Sample Date	TSP Field Sample Number	Site ID	TSP
12/15/88	14702	RIFS1D	69.29
12/20/88	14708	RIFS1	81.83
12/20/88	14709	RIFS2	53.02
12/21/88	14710	RIFS1	61.02
12/21/88	14712	RIFS1D	61.14
12/21/88	14711	RIFS2	28.55
12/27/88	14714	RIFS1	88.38
12/27/88	14715	RIFS2	56.45
12/28/88	14716	RIFS1	70.95
12/29/88	14718	RIFS1	97.99
12/30/88	14720	RIFS1	93.96
12/30/88	14721	RIFS1D	94.93
12/30/88	14722	RIFS2	81.34
01/03/89	14724	RIFS1	128.38
01/03/89	14725	RIFS2	72.39
01/04/89	14726	RIFS1	64.14
01/04/89	14727	RIFS1D	64.73
01/04/89	14729	RIFS2	32.90
01/05/89	14730	RIFS1	35.45
01/06/89	14732	RIFS1	32.11
01/08/89	14734	RIFS1	182.69
01/09/89	14736	RIFS1	59.79
01/09/89	14735	RIFS2	46.29
01/10/89	14737	RIFS1	35.31
01/11/89	14739	RIFS1	27.93
01/12/89	14740	RIFS1	70.88
01/13/89	14742	RIFS1	77.87
01/13/89	14744	RIFS1D	77.30
01/13/89	14743	RIFS2	51.58
01/17/89	14748	RIFS1	56.10
01/17/89	14749	RIFS1D	58.04
01/17/89	14751	RIFS2	51.46
01/18/89	14752	RIFS1	52.16
01/18/89	14753	RIFS2	27.32
01/25/89	14758	RIFS1	68.47
01/25/89	14759	RIFS2	41.16
01/26/89	14760	RIFS1	59.14
01/26/89	14761	RIFS1D	60.84
01/26/89	14763	RIFS2	48.10
01/30/89	14766	RIFS1	63.00
01/30/89	14767	RIFS2	36.79
01/31/89	14768	RIFS1	61.90
01/31/89	14769	RIFS1D	64.56
01/31/89	14771	RIFS2	32.71
02/08/89	14780	RIFS1	138.67
02/08/89	14781	RIFS1D	142.53
02/08/89	14782	RIFS2	88.30
02/09/89	14784	RIFS1	161.90
02/09/89	14785	RIFS2	121.41
02/13/89	14786	RIFS1	30.37
02/13/89	14787	RIFS2	16.50

Ebasco Services Incorporated
TSP Concentrations.

IRA-F Program
All values are in micrograms per standard cubic meter.

Sample Date	TSP Field Sample Number	Site ID	TSP
02/14/89	14788	RIFS1	77.27
02/14/89	14789	RIFS1D	81.41
02/14/89	14790	RIFS2	42.95
02/22/89	14797	RIFS1	67.69
02/22/89	14799	RIFS2	43.48
02/24/89	14953	RIFS1	73.37
02/24/89	14954	RIFS2	42.60
02/27/89	14955	RIFS1	6.28
02/27/89	14956	RIFS2	6.69
02/28/89	14957	RIFS1	45.91
02/28/89	14958	RIFS1D	48.25
02/28/89	14959	RIFS2	30.33
03/07/89	14964	RIFS1	98.96
03/07/89	14965	RIFS2	76.54
03/09/89	14969	RIFS1	79.12
03/09/89	14970	RIFS2	71.00
03/15/89	14973	RIFS1	58.37
03/15/89	14974	RIFS1D	59.34
03/15/89	14975	RIFS2	50.51
03/17/89	14978	RIFS1	67.44
03/17/89	14979	RIFS2	62.27
03/20/89	14980	RIFS1	39.97
03/21/89	14981	RIFS1	83.07
03/23/89	14984	RIFS1	51.94
03/28/89	14986	RIFS1	42.32
03/30/89	14987	RIFS1	33.37
03/30/89	14988	RIFS1D	34.23
04/05/89	14989	RIFS1	55.20
04/06/89	14990	RIFS1	53.18
04/10/89	14992	RIFS1	53.49
04/13/89	18351	RIFS1	66.35
04/13/89	18352	RIFS1D	68.22
04/18/89	18353	RIFS1	73.79
04/20/89	18354	RIFS1	53.31
04/24/89	18356	RIFS1	111.20
04/24/89	18357	RIFS1D	109.19
04/25/89	18358	RIFS1	94.33
05/04/89	18359	RIFS1	58.87

EBASCO SERVICES INCORPORATED　　ROCKY MOUNTAIN ARSENAL PROGRAM　　04/04/91

SUMMARY OF ARSENIC AND METALS　　ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ARSENIC RESULTS	CADMIUM RESULTS	CHROMIUM RESULTS	COPPER RESULTS	LEAD RESULTS	ZINC RESULTS
12/16/88	14702	RIFS1C	0.0012	0.0044	LT 0.0051	0.0810	0.0580	0.0580
12/21/88	14708	RIFS1	0.0010	0.0014	LT 0.0051	0.0930	0.0550	0.0770
12/21/88	14709	RIFS2	0.0010	LT 0.0004	LT 0.0051	0.0990	0.0350	0.0450
12/22/88	14710	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.0680	0.0250	0.0520
12/22/88	14711	RIFS2	LT 0.0004	LT 0.0004	LT 0.0051	0.0410	0.0150	0.0310
12/22/88	14712	RIFS1D	LT 0.0004	LT 0.0004	LT 0.0051	0.0580	0.0240	0.0450
12/28/88	14714	RIFS1	0.0010	0.0018	LT 0.0051	0.0770	0.0430	0.0500
12/28/88	14715	RIFS2	0.0008	0.0006	LT 0.0051	0.0670	0.0270	0.0280
12/29/88	14716	RIFS1	0.0009	0.0027	LT 0.0051	0.0570	0.0490	0.0520
12/30/88	14718	RIFS1	0.0008	0.0052	LT 0.0051	0.1200	0.0590	0.0690
12/31/88	14720	RIFS1	0.0011	0.0016	LT 0.0051	0.1200	0.0560	0.0570
12/31/88	14721	RIFS1D	0.0010	0.0018	LT 0.0051	0.1400	0.0580	0.0590
12/31/88	14722	RIFS2	0.0013	0.0009	LT 0.0051	0.0950	0.0370	0.0400
01/4/89	14724	RIFS1	0.0009	0.0018	LT 0.0051	0.1100	0.0770	0.1000
01/4/89	14725	RIFS2	0.0008	0.0012	LT 0.0051	0.0830	0.0360	0.0580
01/5/89	14726	RIFS1	0.0006	0.0011	LT 0.0051	0.0700	0.0360	0.0530
01/5/89	14727	RIFS1D	0.0005	0.0013	LT 0.0051	0.0610	0.0390	0.0530
01/5/89	14729	RIFS2	0.0007	0.0007	LT 0.0051	0.0540	0.0230	0.0370
01/6/89	14730	RIFS1	0.0005	0.0029	LT 0.0051	0.0866	0.0478	0.0389
01/7/89	14732	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.0109	0.0126	0.0217
01/9/89	14734	RIFS1	0.0014	LT 0.0004	LT 0.0051	LT 0.0087	0.0281	0.0689
01/10/89	14735	RIFS2	LT 0.0004	LT 0.0004	LT 0.0051	0.0929	0.0077	0.0215
01/10/89	14736	RIFS1	0.0005	0.0010	LT 0.0051	0.0505	0.0185	0.0437
01/11/89	14737	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.0428	0.0128	0.0273
01/12/89	14739	RIFS1	0.0006	0.0011	LT 0.0051	0.0702	0.0214	0.0304
01/13/89	14740	RIFS1	0.0004	0.0017	LT 0.0051	0.0834	0.0488	0.0567
01/14/89	14742	RIFS1	0.0006	0.0013	LT 0.0051	0.1080	0.0455	0.0794
01/14/89	14743	RIFS2	0.0005	0.0008	LT 0.0051	0.1040	0.0311	0.0337
01/18/89	14748	RIFS1	0.0007	0.0014	LT 0.0051	0.1070	0.0318	0.0485
01/18/89	14749	RIFS1D	0.0006	0.0016	LT 0.0051	0.1020	0.0335	0.0494
01/18/89	14751	RIFS2	0.0007	0.0006	LT 0.0051	0.0785	0.0201	0.0415
01/19/89	14752	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.0480	0.0150	0.0319
01/19/89	14753	RIFS2	LT 0.0004	LT 0.0004	LT 0.0051	0.0535	0.0073	0.0143
01/26/89	14758	RIFS1	0.0009	0.0009	LT 0.0051	0.1490	0.0425	0.0642
01/26/89	14759	RIFS2	0.0006	LT 0.0004	LT 0.0051	0.1680	0.0217	0.0374
01/27/89	14760	RIFS1	0.0005	LT 0.0004	LT 0.0051	0.1310	0.0460	0.0641
01/27/89	14761	RIFS1D	0.0005	LT 0.0004	LT 0.0051	0.1570	0.0466	0.0649
01/27/89	14763	RIFS2	0.0005	LT 0.0004	LT 0.0051	0.1080	0.0267	0.0423
01/31/89	14766	RIFS1	LT 0.0004	0.0012	LT 0.0051	0.1150	0.0476	0.0650
01/31/89	14767	RIFS2	LT 0.0004	LT 0.0004	LT 0.0051	0.0986	0.0233	0.0322
02/1/89	14768	RIFS1	0.0008	LT 0.0004	LT 0.0051	0.0305	0.0156	0.0270
02/1/89	14769	RIFS1D	0.0008	LT 0.0004	LT 0.0051	0.0226	0.0153	0.0273
02/1/89	14771	RIFS2	0.0006	LT 0.0004	LT 0.0051	0.0239	LT 0.0050	0.0143
02/9/89	14780	RIFS1	0.0015	0.0067	LT 0.0051	0.0671	0.0656	0.0657
02/9/89	14781	RIFS1D	0.0015	0.0065	LT 0.0051	0.0749	0.0674	0.0655
02/9/89	14782	RIFS2	0.0013	0.0032	LT 0.0051	0.0732	0.0422	0.0383
02/10/89	14784	RIFS1	0.0016	0.0057	LT 0.0051	0.0734	0.1080	0.1110
02/10/89	14785	RIFS2	0.0013	0.0026	LT 0.0051	0.0918	0.0779	0.0676
02/14/89	14786	RIFS1	0.0006	LT 0.0004	LT 0.0051	0.0324	0.0070	0.0141
02/14/89	14787	RIFS2	0.0005	LT 0.0004	LT 0.0051	0.0243	LT 0.0050	0.0080
02/15/89	14788	RIFS1	0.0038	LT 0.0004	LT 0.0051	0.0564	0.0186	0.0327

EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/04/91

SUMMARY OF ARSENIC AND METALS | ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ARSENIC RESULTS	CADMIUM RESULTS	CHROMIUM RESULTS	COPPER RESULTS	LEAD RESULTS	ZINC RESULTS
02/15/89	14789	RIFS1D	0.0039	LT 0.0004	LT 0.0051	0.0690	0.0224	0.0362
02/15/89	14790	RIFS2	0.0034	LT 0.0004	LT 0.0051	0.0543	0.0104	0.0162
02/23/89	14797	RIFS1	0.0012	0.0012	0.0141	0.0468	0.0414	0.0606
02/23/89	14799	RIFS2	0.0008	0.0005	LT 0.0051	0.0715	0.0244	0.0418
02/25/89	14953	RIFS1	0.0008	0.0018	LT 0.0051	0.0540	0.0459	0.0354
02/25/89	14954	RIFS2	0.0006	0.0007	LT 0.0051	0.1310	0.0275	0.0467
03/8/89	14964	RIFS1	0.0010	0.0025	LT 0.0051	0.1180	0.0553	0.0791
03/8/89	14965	RIFS2	0.0008	0.0021	LT 0.0051	0.1260	0.0385	0.0501
03/10/89	14969	RIFS1	0.0025	0.0020	LT 0.0051	0.1010	0.0440	0.0635
03/10/89	14970	RIFS2	0.0023	0.0013	LT 0.0051	0.0976	0.0260	0.0457
03/16/89	14973	RIFS1	0.0007	0.0040	LT 0.0051	0.1180	0.0230	0.0442
03/16/89	14974	RIFS1D	0.0006	0.0042	LT 0.0051	0.1360	0.0242	0.0469
03/16/89	14975	RIFS2	LT 0.0004	LT 0.0004	LT 0.0051	0.0535	0.0083	0.0210
03/18/89	14978	RIFS1	0.0005	LT 0.0004	LT 0.0051	0.1200	0.0076	0.0192
03/18/89	14979	RIFS2	0.0007	LT 0.0004	LT 0.0051	0.0598	0.0062	0.0126
03/21/89	14980	RIFS1	0.0007	LT 0.0004	LT 0.0051	0.1330	0.0152	0.0303
03/22/89	14981	RIFS1	0.0005	LT 0.0004	LT 0.0051	0.0904	0.0147	0.0317
03/24/89	14984	RIFS1	0.0005	0.0008	LT 0.0051	0.0870	0.0096	0.0290
03/29/89	14986	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.1250	0.0139	0.0212
03/31/89	14987	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.1110	0.0161	0.0301
03/31/89	14988	RIFS1D	LT 0.0004	LT 0.0004	LT 0.0051	0.1300	0.0165	0.0309
04/6/89	14989	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.0237	0.0157	0.0294
04/7/89	14990	RIFS1	LT 0.0004	0.0009	LT 0.0051	0.0551	0.0204	0.0323
04/11/89	14992	RIFS1	0.0005	LT 0.0004	LT 0.0051	0.0919	0.0241	0.0346
04/14/89	18351	RIFS1	0.0006	LT 0.0004	LT 0.0051	0.0894	0.0368	0.0454
04/14/89	18352	RIFS1D	0.0006	LT 0.0004	LT 0.0051	0.1180	0.0381	0.3330
04/19/89	18353	RIFS1	0.0005	0.0005	LT 0.0051	0.1600	0.0219	0.0446
04/21/89	18354	RIFS1	0.0006	LT 0.0004	LT 0.0051	0.1500	0.0189	0.0456
04/25/89	18356	RIFS1	0.0007	LT 0.0004	LT 0.0051	0.1020	0.0076	0.0296
04/25/89	18357	RIFS1D	0.0007	LT 0.0004	LT 0.0051	0.0448	0.0134	0.0310
04/26/89	18358	RIFS1	0.0008	LT 0.0004	LT 0.0051	0.1220	0.0167	0.0342
05/5/89	18359	RIFS1	0.0005	LT 0.0004	LT 0.0051	GT 0.3070	0.0147	0.0362

SUMMARY OF MERCURY ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	MERCURY RESULTS
12/16/88	5841	RIFS1C	LT 0.6200
12/21/88	5848	RIFS1	LT 0.6200
12/21/88	5852	RIFS2	LT 0.6200
12/22/88	5859	RIFS1	LT 0.6200
12/22/88	5863	RIFS1D	LT 0.6200
12/22/88	5871	RIFS2	LT 0.6200
12/28/88	5881	RIFS2	LT 0.6200
12/28/88	5885	RIFS1	LT 0.6200
12/29/88	5904	RIFS1	LT 0.6200
12/30/88	5908	RIFS1	LT 0.6200
12/31/88	5888	RIFS1	LT 0.6200
12/31/88	5892	RIFS1D	LT 0.6200
12/31/88	5896	RIFS2	LT 0.6200
01/26/89	16662	RIFS1	LT 0.6180
01/26/89	16666	RIFS2	LT 0.6180
01/27/89	16670	RIFS1 •	LT [illegible]
01/27/89	16674	RIFS1D	LT 0.6180
01/27/89	16678	RIFS2	LT 0.6180
01/31/89	16686	RIFS1	LT 0.6180
01/31/89	16690	RIFS2	LT 0.6180
02/1/89	16694	RIFS1	LT 0.6180
02/1/89	16698	RIFS1D	LT 0.6180
02/1/89	16702	RIFS2	LT 0.6180
02/9/89	16718	RIFS1	LT 0.6180
02/9/89	16722	RIFS1D	LT 0.6180
02/9/89	16726	RIFS2	LT 0.6180
02/10/89	16734	RIFS1	LT 0.6180
02/10/89	16738	RIFS2	LT 0.6180
02/14/89	16742	RIFS1	LT 0.6180
02/14/89	16746	RIFS2	LT 0.6180
02/15/89	16750	RIFS1	LT 0.6180
02/15/89	16754	RIFS1D	LT 0.6180
02/15/89	16758	RIFS2	LT 0.6180
02/23/89	20002	RIFS1	LT 0.6200
02/23/89	20006	RIFS2	LT 0.6200
02/25/89	20014	RIFS1	LT 0.6200
02/25/89	20018	RIFS2	LT 0.6200
02/28/89	20022	RIFS1	LT 0.6200
02/28/89	20026	RIFS2	LT 0.6200
03/1/89	20030	RIFS1	LT 0.6200
03/1/89	20034	RIFS1D	LT 0.6200
03/8/89	20048	RIFS1	LT 0.6200
03/8/89	20052	RIFS2	LT 0.6200
03/10/89	20060	RIFS1	LT 0.6200
03/10/89	20064	RIFS2	LT 0.6200
03/16/89	20068	RIFS1	LT 0.6200
03/16/89	20072	RIFS1D	LT 0.6200
03/16/89	20076	RIFS2	LT 0.6200
03/18/89	20080	RIFS1	LT 0.6200
03/18/89	20084	RIFS2	LT 0.6200
03/21/89	20088	RIFS1	LT 0.6180

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/04/91

SUMMARY OF MERCURY ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	MERCURY RESULTS
03/22/89	20092	RIFS1	LT 0.6180
03/24/89	20100	RIFS1	LT 0.6180
03/29/89	20104	RIFS1	LT 0.6180
03/31/89	20108	RIFS1	LT 0.6180
03/31/89	20112	RIFS1D	LT 0.6180
04/6/89	20115	RIFS1	LT 0.6180
04/7/89	20118	RIFS1	LT 0.6180
04/11/89	20124	RIFS1	LT 0.6180
04/14/89	20127	RIFS1	LT 0.6180
04/14/89	20130	RIFS1D	LT 0.6180
04/19/89	20133	RIFS1	LT 0.6180
04/21/89	20136	RIFS1	LT 0.6180
04/25/89	20142	RIFS1	LT 0.6180
04/25/89	20145	RIFS1D	LT 0.6180
04/26/89	20148	RIFS1	LT 0.6180
05/5/89	20151	RIFS1	LT 0.6180

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/04/91

SUMMARY OF ORGANO CHLORINE PESTICIDE CONCENTRATIONS ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
03/21/89	16072	RIFS1	LT 0.0003	LT 0.0004	0.0005	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
03/22/89	16073	RIFS1	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	0.0007
03/24/89	16076	RIFS1	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
03/29/89	16078	RIFS1	LT 0.0003	LT 0.0004	0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
03/31/89	16087	RIFS1	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	0.0005
03/31/89	16088	RIFS1D	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/6/89	16089	RIFS1	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/7/89	16090	RIFS1	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/11/89	16094	RIFS1	LT 0.0003	LT 0.0004	0.0006	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/14/89	16095	RIFS1	LT 0.0003	LT 0.0004	0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/14/89	16096	RIFS1D	LT 0.0003	LT 0.0004	0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/19/89	16097	RIFS1	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/21/89	16098	RIFS1	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/25/89	16100	RIFS1	LT 0.0003	0.0006	0.0009	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/25/89	16101	RIFS1D	LT 0.0003	0.0006	0.0009	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
04/26/89	16102	RIFS1	LT 0.0003	0.0008	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
05/5/89	16103	RIFS1	LT 0.0003	LT 0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
10/22/88	05701	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/26/88	05702	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/29/88	05703	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
11/2/88	05705	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
11/8/88	05706	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
11/10/88	05708	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
11/17/88	05712	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
11/19/88	05713	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
11/22/88	05717	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
11/23/88	05718	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/1/88	05722	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/2/88	05723	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/6/88	05726	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/10/88	05729	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/13/88	05731	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/15/88	05732	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/16/88	05733	RIFS1C	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/21/88	05739	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/21/88	05740	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
12/22/88	05741	RIFS1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/22/88	05742	RIFS2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/28/88	05745	RIFS1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/28/88	05746	RIFS2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/29/88	05747	RIFS1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/30/88	05749	RIFS1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/31/88	05751	RIFS1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/31/88	05753	RIFS2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/4/89	05755	RIFS1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/4/89	05756	RIFS2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/5/89	05757	RIFS1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/5/89	05760	RIFS2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/6/89	05761	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/7/89	05763	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/9/89	19741	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/10/89	19742	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/10/89	19743	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/11/89	05765	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/12/89	05766	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/18/89	05775	RIFS1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/18/89	05776	RIFS1D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/18/89	05778	RIFS2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/19/89	05779	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/19/89	05780	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/26/89	05789	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/26/89	19765	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/27/89	16001	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/27/89	16002	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/27/89	16004	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/31/89	16007	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
01/31/89	16008	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
10/22/88	05701	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/26/88	05702	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/29/88	05703	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
11/2/88	05705	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
11/8/88	05706	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
11/10/88	05708	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
11/17/88	05712	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
11/19/88	05713	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
11/22/88	05717	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
11/23/88	05718	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/1/88	05722	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/2/88	05723	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/6/88	05726	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/10/88	05729	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/13/88	05731	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/15/88	05732	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/16/88	05733	RIFS1C	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/21/88	05739	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/21/88	05740	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
12/22/88	05741	RIFS1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/22/88	05742	RIFS2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/28/88	05745	RIFS1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/28/88	05746	RIFS2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/29/88	05747	RIFS1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/30/88	05749	RIFS1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/31/88	05751	RIFS1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/31/88	05753	RIFS2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/4/89	05755	RIFS1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/4/89	05756	RIFS2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/5/89	05757	RIFS1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/5/89	05760	RIFS2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/6/89	05761	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/7/89	05763	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/9/89	19741	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/10/89	19742	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/10/89	19743	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/11/89	05765	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/12/89	05766	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/18/89	05775	RIFS1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/18/89	05776	RIFS1D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/18/89	05778	RIFS2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/19/89	05779	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/19/89	05780	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/26/89	05789	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/26/89	19765	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/27/89	16001	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/27/89	16002	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/27/89	16004	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/31/89	16007	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
01/31/89	16008	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
02/1/89	16009	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/1/89	16010	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/1/89	16012	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/9/89	16021	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/9/89	16023	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/9/89	16024	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/10/89	16026	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/10/89	16027	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/14/89	16028	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/14/89	16029	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/15/89	16030	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/15/89	16031	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/15/89	16032	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/23/89	16039	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/23/89	16041	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/25/89	16044	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/25/89	16045	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/28/89	16046	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
02/28/89	16047	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/1/89	16048	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/1/89	16049	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
[illegible]	[illegible]	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/6/89	16055	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/8/89	16057	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/10/89	16061	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/10/89	16062	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/16/89	16065	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/16/89	16066	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/16/89	16067	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/18/89	16070	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/18/89	16071	RIFS2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/21/89	16072	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/22/89	16073	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/24/89	16076	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/29/89	16078	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/31/89	16087	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
03/31/89	16088	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/6/89	16089	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/7/89	16090	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/14/89	16095	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/14/89	16096	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/19/89	16097	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/21/89	16098	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/25/89	16100	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/25/89	16101	RIFS1D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
04/26/89	16102	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/5/89	16103	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
02/1/89	16009	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/1/89	16010	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/1/89	16012	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/9/89	16021	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/9/89	16023	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/9/89	16024	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/10/89	16026	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/10/89	16027	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/14/89	16028	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/14/89	16029	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/15/89	16030	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/15/89	16031	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/15/89	16032	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/23/89	16039	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/23/89	16041	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/25/89	16044	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/25/89	16045	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/28/89	16046	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
02/28/89	16047	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/1/89	16048	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/1/89	16049	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/1/89	16050	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/8/89	16055	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/8/89	16057	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/10/89	16061	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
[illegible]	16062	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/16/89	16065	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/16/89	16066	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/16/89	16067	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/18/89	16070	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/18/89	16071	RIFS2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/21/89	16072	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/22/89	16073	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/24/89	16076	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/29/89	16078	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/31/89	16087	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
03/31/89	16088	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/6/89	16089	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/7/89	16090	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/14/89	16095	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/14/89	16096	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/19/89	16097	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/21/89	16098	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/25/89	16100	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/25/89	16101	RIFS1D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
04/26/89	16102	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/5/89	16103	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417

EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
10/22/88	05801T 05801TC	RIFS1	0.7500 b	LT 0.0300	LT 0.0240	LT 0.0210	2.8600	LT 0.0420	1.8400 a	0.2080 a	GT 0.3500	0.1400 b	LT 0.0330
10/29/88	05803T 05803TC	RIFS1	2.1900 a	LT 0.0295	LT 0.0243	0.1340 a	GT 0.3470	0.4930 a	GT 0.3470	0.4330 a	5.2500 a	0.5280 b	0.0738
11/1/88	05802T 05802TC	RIFS1	0.9720 a	LT 0.0295	LT 0.0243	LT 0.0208	2.7500	LT 0.0417	2.1200 a	0.2780 a	13.700	1.1500 a	0.1230
11/2/88	05804T 05804TC	RIFS1	2.1300 a	LT 0.0295	LT 0.0243	LT 0.0208	4.5600	LT 0.0417	3.5600 a	0.3850 a	3.8100 a	0.0959 b	LT 0.0330
11/10/88	05806T 05806TC	RIFS1	1.5200 a	LT 0.0295	LT 0.0243	0.1490	1.6600	LT 0.0417	4.6300 a	0.7440 a	1.3200 b	0.1420 b	LT 0.0330
11/17/88	05808 05809	RIFS1	2.6600 a	LT 0.0295	LT 0.0243	0.2480	2.7600	LT 0.0417	5.3100	0.8650 a	5.2400 a	0.1350 b	LT 0.0330
11/19/88	05812 05813	RIFS1	0.9320 a	LT 0.0295	LT 0.0243	0.0787	0.5670	LT 0.0417	1.8200	0.5690 a	0.6040 a	0.3910	LT 0.0330
11/22/88	05814 05815	RIFS1	0.9520 a	LT 0.0295	LT 0.0243	LT 0.0208	1.9300	LT 0.0417	2.9000 a	0.3190 a	1.7100 a	LT 0.0208	LT 0.0330
11/23/88	05816 05817	RIFS1	GT 0.3470	LT 0.0295	LT 0.0243	LT 0.0208	2.3300	LT 0.0417	2.6600 a	0.2420 a	2.4700 a	LT 0.0208	LT 0.0330
12/1/88	05820 05821	RIFS1	0.8590 a	LT 0.0295	LT 0.0243	LT 0.0208	2.1400	LT 0.0417	2.4500 a	0.2100 a	2.7600 a	LT 0.0208	LT 0.0330
12/2/88	05824 05825	RIFS1	1.2100 a	LT 0.0295	LT 0.0243	LT 0.0208	1.5200	LT 0.0417	2.5200 a	0.2610 a	2.0700 a	LT 0.0208	LT 0.0330
12/6/88	05826 05827	RIFS1	4.8300 a	LT 0.0295	LT 0.0243	LT 0.0208	4.4800	0.4140 a	8.6000	0.6200 a	4.9600 a	1.3500 a	LT 0.0330
12/10/88	05828 05829	RIFS1	4.3700 a	LT 0.0295	LT 0.0243	LT 0.0208	2.3000	LT 0.0417	9.4700	0.9340 a	5.2000 a	0.4710 a	LT 0.0330
12/13/88	05832 05833	RIFS1	1.6900 a	LT 0.0295	LT 0.0243	0.0390 b	1.1400	LT 0.0417	3.2100	0.4590 a	1.2100 a	0.0710 b	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
10/22/88	05801T	05801TC	RIFS1	LT 0.0380	LT 0.0450	LT 0.0470	1.6400	5.7900	0.2140	LT 0.1000	LT 0.0400	1.2000	LT 0.0520	6.4300
10/29/88	05803T	05803TC	RIFS1	0.4040	3.7700	0.1130	2.9800	16.500	LT 0.0174	LT 0.1020	LT 0.0399	1.8500	0.1590	GT 0.6940
11/1/88	05802T	05802TC	RIFS1	0.3890	LT 0.0451	LT 0.0469	1.7200	9.4900	0.1870	LT 0.1020	LT 0.0399	1.9200	0.2560 a	GT 0.6940
11/2/88	05804T	05804TC	RIFS1	LT 0.0382	0.2920	LT 0.0469	2.4700	14.800	0.5140	LT 0.1020	LT 0.0399	1.3400	0.1930 a	GT 0.6940
11/10/88	05806T	05806TC	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.0800	5.4100	LT 0.0174	LT 0.1020	LT 0.0399	0.5740	0.0710	1.9300
11/17/88	05808	05809	RIFS1	LT 0.0382	0.2760	LT 0.0469	1.7900	7.5900	LT 0.0174	LT 0.1020	LT 0.0399	1.1000	0.1420	3.1700
11/19/88	05812	05813	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.4330	2.7300	LT 0.0174	LT 0.1020	LT 0.0399	0.5000	LT 0.0521	1.5700
11/22/88	05814	05815	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.3800	4.4800	LT 0.0174	LT 0.1020	LT 0.0399	1.3800	0.0869	2.4100
11/25/88	05816	05817	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.4700	5.3300	LT 0.0174	LT 0.1020	LT 0.0399	2.2300	0.0803	2.6700
12/1/88	05820	05821	RIFS1	LT 0.0382	LT 0.0451	0.0538	1.6200	6.2100	LT 0.0174	LT 0.1020	LT 0.0399	2.0000	0.0710	2.5500
12/2/88	05824	05825	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.8970	4.4800	LT 0.0174	LT 0.1020	LT 0.0399	1.8600	0.0948	1.9700
12/6/88	05826	05827	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	3.0300	12.100	0.2590	LT 0.1020	LT 0.0399	2.8300	0.2100	3.4100
12/10/88	05828	05829	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.8000	9.0000	LT 0.0174	LT 0.1020	LT 0.0399	1.5000	0.1220	3.2700
12/13/88	05832	05833	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.8970	4.4300	LT 0.0174	LT 0.1020	LT 0.0399	1.3100	LT 0.0521	1.4800

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EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/04/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
12/16/88	05839 05640	RIFS1C	5.4700 a	LT 0.0295	LT 0.0243	LT 0.0208	2.9000	LT 0.0417	9.6300	1.3300 a	3.8000 a	0.4650	LT 0.0330
12/21/88	05846 05847	RIFS1	4.2600 a	LT 0.0295	LT 0.0243	LT 0.0208	2.4100	LT 0.0417	6.5600	0.8090 a	7.4500 a	0.3970	LT 0.0330
12/21/88	05850 05851	RIFS2	3.7100 a	LT 0.0295	LT 0.0243	LT 0.0208	1.1800	0.0743	4.6500	1.3200 a	6.8200 a	0.4190	LT 0.0330
12/22/88	05860 05861	RIFS1	1.1000 a	LT 0.0300	LT 0.0240	0.1100	0.8280	LT 0.0420	2.5900	0.7260	0.8420 a	0.1530 a	LT 0.0330
12/22/88	05864 05865	RIFS1D	1.1300 a	LT 0.0300	LT 0.0240	LT 0.0210	0.8280	LT 0.0420	2.6200	0.7410	0.8130 a	0.0460 a	LT 0.0330
12/22/88	05872 05873	RIFS2	0.9750 a	LT 0.0300	LT 0.0240	0.0920	0.4830	LT 0.0420	1.9700	0.6370	1.1000 a	0.0460 a	LT 0.0330
12/26/88	05883 05884	RIFS1	3.1400 a	LT 0.0295	LT 0.0243	LT 0.0208	2.6000	LT 0.0417	8.1100	1.0700 a	3.6600 a	0.4000	LT 0.0330
12/28/88	05879 05880	RIFS2	2.0300 a	LT 0.0295	LT 0.0243	LT 0.0208	1.5900	LT 0.0417	5.6700	0.8650 a	2.8300 a	0.2170	LT 0.0330
12/29/88	05905 05906	RIFS1	3.5800 a	LT 0.0295	LT 0.0243	0.2340	4.5200	LT 0.0417	3.5400	0.8940 a	4.0700 a	0.3870	LT 0.0330
12/30/88	05909 05910	RIFS1	3.4100 a	LT 0.0295	LT 0.0243	0.3790	4.5200	LT 0.0417	9.6600	0.7590 a	6.5900 a	1.0400	LT 0.0330
12/31/88	05889 05890	RIFS1	6.9300 a	LT 0.0295	LT 0.0243	LT 0.0208	3.4500	LT 0.0417	11.900	0.9310 a	9.9700 a	0.6960 a	0.0348
12/31/88	05893 05894	RIFS1D	6.5400 a	LT 0.0300	LT 0.0240	LT 0.0210	4.6400	LT 0.0420	14.100	0.8360 a	8.0700 a	0.5500 a	LT 0.0330
12/31/88	05897 05898	RIFS2	3.6900 a	LT 0.0300	LT 0.0240	LT 0.0210	3.4500	LT 0.0420	8.4800	1.0200 a	5.0000 a	0.3400	LT 0.0330
01/4/89	17481 17500	RIFS1	2.9700 a	LT 0.0295	LT 0.0243	LT 0.0208	3.6700 b	LT 0.0417	8.8100 a	0.6640 a	11.300 a	0.2500 a	LT 0.0330

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EBASCO SERVICES INCORPORATED — ROCKY MOUNTAIN ARSENAL PROGRAM — 04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
12/16/88	05839 05840	RIFS1C	LT 0.0382	LT 0.0451	LT 0.0469	2.3300	7.6700	LT 0.0174	LT 0.1020	LT 0.0399	1.0700	0.1260	3.6700
12/21/88	05846 05847	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.3500	7.4100	LT 0.0174	LT 0.1020	LT 0.0399	1.8500	0.4260	2.7400
12/21/88	05850 05851	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.8570	4.2900	LT 0.0174	LT 0.1020	LT 0.0399	0.7860	0.1350	1.6400
12/22/88	05860 05861	RIFS1	LT 0.0380	LT 0.0450	LT 0.0470	0.5860	3.2100	LT 0.0170	LT 0.1000	LT 0.0400	0.4140	LT 0.0520	1.0700
12/22/88	05864 05865	RIFS1D	LT 0.0380	LT 0.0450	LT 0.0470	0.5860	3.2400	LT 0.0170	LT 0.1000	LT 0.0400	0.4140	LT 0.0520	1.0300
12/22/88	05872 05873	RIFS2	LT 0.0380	LT 0.0450	LT 0.0470	0.3790	2.1000	LT 0.0170	LT 0.1000	LT 0.0400	0.4400	LT 0.0520	0.6550
12/28/88	05883 05884	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	2.1700	7.6700	LT 0.0174	LT 0.1020	LT 0.0399	1.9300	0.1530	2.9000
12/28/88	05879 05880	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	1.3400	5.5200	LT 0.0174	LT 0.1020	LT 0.0399	0.8620	0.0948	1.9000
12/29/88	05905 05906	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	3.3400	11.400	LT 0.0174	LT 0.1020	LT 0.0399	3.2400	0.1940	8.9700
12/30/88	05909 05910	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	3.3800	12.400	LT 0.0174	LT 0.1020	LT 0.0399	3.1400	0.1660	9.3100
12/31/88	05889 05890	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	4.8300	15.500	LT 0.0174	LT 0.1020	LT 0.0399	3.2100	0.3080	12.400
12/31/88	05893 05894	RIFS1D	LT 0.0380	LT 0.0450	LT 0.0470	3.5700	12.900	LT 0.0170	LT 0.1000	LT 0.0400	3.2900	0.2600	10.000
12/31/88	05897 05898	RIFS2	LT 0.0380	LT 0.0450	LT 0.0470	2.6300	10.700	LT 0.0170	LT 0.1000	LT 0.0400	2.4800	0.1500	7.9300
01/4/89	17481 17500	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	2.6300 b	10.000 b	LT 0.0174	LT 0.1020	LT 0.0399	3.2000 b	0.1340 b	8.0000 b

a - t/c weight).25t weight
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EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
01/4/89	17484	17485	RIFS2	3.9300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.5400	LT 0.0420	6.0200	0.8830 a	17.100 a	0.2580 a	LT 0.0330
01/5/89	17488	17489	RIFS1	2.4600 a	LT 0.0300	LT 0.0240	LT 0.0210	2.5000	LT 0.0420	5.1800	0.7240 a	32.900 a	0.1950 a	0.3200
01/5/89	17472	17473	RIFS1D	2.3800 a	LT 0.0300	LT 0.0240	LT 0.0210	2.3400	LT 0.0420	5.3100 a	0.5700 a	22.800 a	0.1840 a	0.0560
01/5/89	17461	17480	RIFS2	1.7200 a	LT 0.0295	LT 0.0243	LT 0.0208	1.2400 b	LT 0.0417	3.2400 a	0.6490 a	14.500 a	0.1250 a	LT 0.0330
01/6/89	17443	17444	RIFS1	1.9200 a	LT 0.0295	LT 0.0243	LT 0.0208	1.8900	LT 0.0417	5.7100	0.5670 a	1.1900 a	0.0841 b	LT 0.0330
01/7/89	17447	17448	RIFS1	0.9270 a	LT 0.0295	LT 0.0243	0.1160	0.2990	LT 0.0417	1.5100	0.8770	0.6510 a	0.1030	LT 0.0330
01/9/89	17451	17452	RIFS1	1.2900 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4500	LT 0.0417	1.6600 a	0.6770 a	1.5400 a	0.0917	LT 0.0330
01/10/89	17455	17456	RIFS1	2.0000 a	LT 0.0295	LT 0.0243	LT 0.0208	1.3600	LT 0.0417	4.5800 a	0.6370 a	1.5200 a	0.1730 a	0.0396
01/10/89	17459	17460	RIFS2	1.2900 a	LT 0.0295	LT 0.0243	0.0334 b	0.6430	LT 0.0417	2.8900	0.6010 a	0.6610 a	0.1140 a	0.0971 a
01/11/89	17464	17465	RIFS1	1.3400 a	LT 0.0295	LT 0.0243	LT 0.0208	1.1700	LT 0.0417	5.0700	0.7670 a	1.1400 a	0.4190	LT 0.0330
01/12/89	17468	17469	RIFS1	2.5200	LT 0.0295	LT 0.0243	LT 0.0208	3.0000	LT 0.0417	8.9700	0.8620	1.7900 a	0.3090	0.0331
01/13/89	16603	16604	RIFS1	4.1300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.6900	LT 0.0420	8.5100	1.2400 a	1.9000 a	0.4350	LT 0.0330
01/14/89	16607	16608	RIFS1	3.4500 a	LT 0.0300	LT 0.0240	0.0460 b	3.0700	LT 0.0420	10.200	1.2500 a	2.0000 a	0.2700 a	0.0630
01/14/89	16611	16612	RIFS1D	4.3500 a	LT 0.0300	LT 0.0240	LT 0.0210	3.3800	LT 0.0420	11.400	1.2600 a	2.0400 a	0.2900 a	0.0520

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
01/4/89	17434	17435	RIFS2	LT 0.0380	LT 0.0450	LT 0.0470	1.9600	7.8600	LT 0.0170	LT 0.1000	LT 0.0400	1.7100	0.0980	6.0700
01/5/89	17488	17489	RIFS1	LT 0.0380	LT 0.0450	LT 0.0470	1.7900	7.8600	LT 0.0170	LT 0.1000	LT 0.0400	1.7100	0.1300	5.7100
01/5/89	17472	17473	RIFS1D	LT 0.0380	LT 0.0450	LT 0.0470	1.6900	6.9000	LT 0.0170	LT 0.1000	LT 0.0400	1.5500	0.0910	5.5200
01/5/89	17461	17480	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.9660 b	4.8300 b	LT 0.0174	LT 0.1020	LT 0.0399	1.1400 b	0.0631 b	3.4100 b
01/6/89	17443	17444	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.4800	7.4100	LT 0.0174	LT 0.1020	LT 0.0399	1.3300	0.0978	5.1900
01/7/89	17447	17448	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.1360	0.8710	LT 0.0174	LT 0.1020	LT 0.0399	0.1470	0.0406	0.4520
01/9/89	17451	17452	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.3310	2.0000	LT 0.0174	LT 0.1020	LT 0.0399	0.3940	LT 0.0330	1.2200
01/10/89	17455	17456	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.1400	5.0000	LT 0.0174	LT 0.1020	LT 0.0399	0.9290	0.0696	3.5700
01/10/89	17459	17460	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.7140	2.7500	LT 0.0174	LT 0.1020	LT 0.0399	0.5710	LT 0.0521	1.7100
01/11/89	17464	17465	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.0300	6.0000	LT 0.0174	LT 0.1020	LT 0.0399	0.6330	0.0917	3.6700
01/12/89	17468	17469	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	2.4500	10.300	LT 0.0174	LT 0.1020	LT 0.0399	2.2800	0.1900	7.5900
01/13/89	16603	16604	RIFS1	LT 0.0380	LT 0.0450	LT 0.0470	2.5500	9.9600	LT 0.0170	LT 0.1000	LT 0.0400	3.0700	0.3200 a	6.9000
01/14/89	16607	16608	RIFS1	LT 0.0330	LT 0.0450	LT 0.0470	2.9300	11.700	LT 0.0170	LT 0.1000	LT 0.0400	2.5500	0.1700	7.9300
01/14/89	16611	16612	RIFS1D	LT 0.0380	LT 0.0450	LT 0.0470	3.1700	12.300	LT 0.0170	LT 0.1000	LT 0.0400	2.6900	0.1600	8.2800

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EBASCO SERVICES INCORPORATED — ROCKY MOUNTAIN ARSENAL PROGRAM — 04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
01/16/89	16615	16616	RIFS2	3.5700 a	LT 0.0300	LT 0.0260	LT 0.0210	2.8300	LT 0.0420	10.900	1.2500	1.1200 a	0.3620 a	0.0440
01/18/89	16631	16632	RIFS1	2.8000 a	LT 0.0295	LT 0.0243	LT 0.0208	1.6700	LT 0.0417	4.6000	1.0000 a	1.4000 a	0.2200 a	LT 0.0330
01/18/89	16635	16636	RIFS1D	3.4000 a	LT 0.0295	LT 0.0243	LT 0.0208	2.0700	LT 0.0417	7.0000	1.1100 a	1.5600 a	0.2540 a	LT 0.0330
01/18/89	16639	16640	RIFS2	2.3500 a	LT 0.0295	LT 0.0243	LT 0.0208	1.4100	LT 0.0417	5.6700	1.0600	0.9500 a	0.1700 a	0.0396
01/19/89	16647	16648	RIFS1	1.9000 a	LT 0.0295	LT 0.0243	3.4100 a	0.9660	LT 0.0417	2.1400	8.6200 a	1.1400 a	0.3090 a	LT 0.0330
01/19/89	16651	16652	RIFS2	1.1400 a	LT 0.0295	LT 0.0243	3.7600 a	0.6210	LT 0.0417	1.9500	9.6500 a	1.0200 a	0.3370 a	LT 0.0330
01/26/89	16663	16664	RIFS1	2.0300 a	LT 0.0295	LT 0.0243	0.5400 a	1.4000	LT 0.0417	3.3000	2.5600 a	2.6000 a	0.2510	0.0403
01/27/89	16675	16676	RIFS1D	3.8500 a	LT 0.0295	LT 0.0243	1.0800 a	2.8900	LT 0.0417	8.8000	4.4100 a	3.4400 a	0.4170 a	LT 0.0330
01/31/89	16687	16688	RIFS1	3.4200 a	LT 0.0295	LT 0.0243	0.0771	1.4300	LT 0.0417	GT 0.3470	0.6870 a	1.3700 a	0.0993 b	LT 0.0330
02/1/89	16699	16700	RIFS1D	0.6920	LT 0.0295	LT 0.0243	0.1660	0.3480	LT 0.0417	1.3500	1.2200	1.0400 a	0.1310	LT 0.0330
02/9/89	16719	16720	RIFS1	4.5900 a	LT 0.0295	LT 0.0243	GT 0.3470	5.2300	LT 0.0417	4.7900	GT 0.3470	2.8700 a	0.4650 a	0.0383
02/9/89	16723	16724	RIFS1D	4.8000 a	LT 0.0295	LT 0.0243	GT 0.3470	8.0000	LT 0.0417	5.4700	4.1400	4.7000 a	0.6490	0.0437
02/9/89	16727	16728	RIFS2	4.6600 a	LT 0.0295	LT 0.0243	LT 0.0208	7.0000	LT 0.0417	6.5700	2.3300	1.7500 a	0.4760	LT 0.0330
02/10/89	16735	16736	RIFS1	6.4600 a	LT 0.0295	LT 0.0243	0.1590 b	6.2600	LT 0.0417	9.0100	3.5500	6.2800 a	0.5770 a	LT 0.0330

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EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
01/14/89	16615	16616	RIFS2	LT 0.0380	LT 0.0450	LT 0.0470	2.7000	11.100	LT 0.0170	LT 0.1000	LT 0.0400	2.3300	0.1300	7.3300
01/18/89	16631	16632	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.5300	6.3300	LT 0.0174	LT 0.1020	LT 0.0399	2.7300	0.1610	4.6700
01/18/89	16635	16636	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	1.8900	8.2100	LT 0.0174	LT 0.1020	LT 0.0399	3.4600	0.2010	5.7100
01/18/89	16639	16640	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	1.4700	6.4100	LT 0.0174	LT 0.1020	LT 0.0399	2.1800	0.1720	3.9300
01/19/89	16647	16648	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.6900	5.9000	LT 0.0174	LT 0.1020	LT 0.0399	0.5520	0.1580 a	2.3100
01/19/89	16651	16652	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.4830	4.5500	LT 0.0174	LT 0.1020	LT 0.0399	0.4900	0.0869	1.6900
01/26/89	16663	16664	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.0700	6.2800	LT 0.0174	LT 0.1020	LT 0.0399	1.1300	0.1950	3.6700
01/27/89	16675	16676	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	1.9600	13.700	LT 0.0174	LT 0.1020	LT 0.0399	2.7900	0.2040	7.7800
01/31/89	16687	16688	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.1800	5.2800	LT 0.0174	LT 0.1020	LT 0.0399	2.5900	0.1020	3.1400
02/1/89	16699	16700	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	0.2660	1.4600	LT 0.0174	LT 0.1020	LT 0.0399	0.2080	0.0619	0.8460
02/9/89	16719	16720	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	3.4600	24.200	LT 0.0174	LT 0.1020	LT 0.0399	2.4600	0.3360	9.8200
02/9/89	16723	16724	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	5.6700	30.700	LT 0.0174	LT 0.1020	LT 0.0399	3.0000	0.3210	14.300
02/9/89	16727	16728	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	5.3300	29.700	LT 0.0174	LT 0.1020	LT 0.0399	3.0000	0.3100	12.700
02/10/89	16735	16736	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	6.2700	10.900	LT 0.0174	LT 0.1020	LT 0.0399	3.5000	0.6210	8.7700

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EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
02/15/89	16751	16752	RIFS1	0.2640 b	LT 0.0295	LT 0.0243	0.2230 b	0.5520	LT 0.0417	0.5170 b	0.6900 b	1.2800 a	LT 0.0208	LT 0.0330
02/15/89	16759	16760	RIFS2	0.8050 a	LT 0.0295	LT 0.0243	GT 0.3470	0.3690	LT 0.0417	1.5800	3.5500 a	0.8140 a	0.1740 a	LT 0.0330
02/23/89	20003	20004	RIFS1	1.9700 a	LT 0.0295	LT 0.0243	LT 0.0208	1.2400	LT 0.0417	2.1900	0.9250 a	1.1400 b	0.1030 b	LT 0.0330
02/23/89	20007	20008	RIFS2	1.4500 a	LT 0.0295	LT 0.0243	LT 0.0208	0.8620	LT 0.0417	2.2800 a	0.6900	0.1700 a	0.0997 b	LT 0.0330
02/25/89	20015	20016	RIFS1	1.0400 a	LT 0.0295	LT 0.0243	LT 0.0208	1.3600	LT 0.0417	2.7200 a	0.6610	0.6070 b	0.0664 b	LT 0.0330
02/25/89	20019	20020	RIFS2	0.7930 a	LT 0.0295	LT 0.0243	LT 0.0208	0.6430	LT 0.0417	1.7500 a	0.6660	LT 0.0278	0.0479 b	LT 0.0330
02/28/89	20023	20024	RIFS1	0.6460 a	LT 0.0295	LT 0.0243	0.0993	0.0333	LT 0.0417	1.2300 a	0.9330	0.0613	0.1130 a	LT 0.0330
02/28/89	20027	20028	RIFS2	0.6680 a	LT 0.0295	LT 0.0243	0.0829	LT 0.0278	LT 0.0417	0.9680 a	1.1000	0.0639	0.1100 a	LT 0.0330
03/1/89	20031	20032	RIFS1	1.4800 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5860	LT 0.0417	1.9700	0.9920	0.5560 a	0.2340 a	LT 0.0330
03/1/89	20035	20036	RIFS1D	1.4500 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5170	LT 0.0417	2.4700	0.8080	1.0300 a	0.2700 a	LT 0.0330
03/1/89	20039	20040	RIFS2	1.3700 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4290	LT 0.0417	1.6700	1.0500	0.9810 a	0.2100 a	LT 0.0330
03/8/89	20049	20050	RIFS1	3.4800 a	LT 0.0295	LT 0.0243	0.2100 b	2.7800	LT 0.0417	6.7700 a	0.6470 a	2.3300 a	0.3000 b	LT 0.0330
03/8/89	20053	20054	RIFS2	2.6400 a	LT 0.0295	LT 0.0243	LT 0.0208	2.1100	LT 0.0417	5.7500 a	0.6230 a	2.7900 a	0.1300 b	LT 0.0330
03/10/89	20061	20062	RIFS1	1.4600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.5700	LT 0.0420	GT 0.3500	0.7210 a	3.6100 a	0.1910	LT 0.0330

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EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/04/91

ALL UNITS ARE IN UG/MS | SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
02/15/89	16751 16752	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.4480	5.1700	LT 0.0174	LT 0.1020	LT 0.0399	0.3520	LT 0.0330	1.5900
02/15/89	16759 16760	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.3320	4.2100	LT 0.0174	LT 0.1020	LT 0.0399	0.2790	LT 0.0330	1.0300
02/23/89	20003 20004	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.2400	5.5200	LT 0.0174	LT 0.1020	LT 0.0399	0.9660	0.1110	2.5900
02/23/89	20007 20008	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.7930	4.8300	LT 0.0174	LT 0.1020	LT 0.0399	0.6550	0.0631	2.2100
02/25/89	20015 20016	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.0700	6.4300	LT 0.0174	LT 0.1020	LT 0.0399	0.9290	LT 0.0330	2.9300
02/25/89	20019 20020	RIFS2	LT 0.0332	LT 0.0451	LT 0.0469	0.5360	3.2100	LT 0.0174	LT 0.1020	LT 0.0399	0.4290	LT 0.0330	1.8200
02/28/89	20023 20024	RIFS1	LT 0.0352	LT 0.0451	LT 0.0469	0.0353	0.3170	LT 0.0174	LT 0.1020	LT 0.0399	0.1850	LT 0.0330	LT 0.1410
02/28/89	20027 20028	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.0310	0.2750	LT 0.0174	LT 0.1020	LT 0.0399	0.1600	LT 0.0330	LT 0.1410
03/1/89	20031 20032	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.5170	3.4900	LT 0.0174	LT 0.1020	LT 0.0399	0.5170	LT 0.0330	1.7600
03/1/89	20035 20036	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	0.5170	3.6900	LT 0.0174	LT 0.1020	LT 0.0399	GT 0.3470	LT 0.0330	1.5500
03/1/89	20039 20040	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.3930	3.1100	LT 0.0174	LT 0.1020	LT 0.0399	0.4610	LT 0.0330	1.3200
03/8/89	20049 20050	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	2.3000	21.100	LT 0.0174	LT 0.1020	LT 0.0399	3.8500	0.1570	4.6700
03/8/89	20053 20054	RIFS2	LT 0.0332	LT 0.0451	LT 0.0469	2.0700	16.600	LT 0.0174	LT 0.1020	LT 0.0399	2.6000	0.0736	6.4300
03/10/89	20061 20062	RIFS1	LT 0.0380	LT 0.0450	LT 0.0470	1.1400	10.000	LT 0.0170	LT 0.1000	LT 0.0400	1.4300	0.1300	3.9300

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GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
03/10/89	20065 20066	RIFS2	1.5600 a	LT 0.0295	LT 0.0243	LT 0.0208	1.1700	LT 0.0417	3.3300	1.0700	GT 0.3470	0.2650	LT 0.0330
03/16/89	20069 20070	RIFS1	1.4200 a	LT 0.0295	LT 0.0243	GT 0.3470	1.2700	LT 0.0417	2.2100 a	2.8300	20.500 a	0.2220 a	LT 0.0330
03/16/89	20073 20074	RIFS1D	1.6700 a	LT 0.0295	LT 0.0243	0.1440 b	1.5200	LT 0.0417	2.8500 a	0.7530 a	2.7600 a	0.0800 b	LT 0.0330
03/16/89	20077 20078	RIFS2	1.1100 a	LT 0.0295	LT 0.0243	0.3380	0.7860	LT 0.0417	1.5000 a	1.2300	4.8600 a	0.1300 a	LT 0.0330
03/18/89	20081 20082	RIFS1	0.9250 a	LT 0.0295	LT 0.0243	0.2020	0.4640	LT 0.0417	2.4200	0.6910 a	0.7310 a	0.1730 a	LT 0.0330
03/18/89	20085 20086	RIFS2	0.7390 a	LT 0.0295	LT 0.0243	0.1350	0.3440	LT 0.0417	1.6200	0.6510	0.3750 a	0.0934 a	LT 0.0330
03/21/89	20089 20090	RIFS1	8.7500 a	LT 0.0295	LT 0.0243	LT 0.0208	1.1300	LT 0.0417	2.3500	0.6140 a	4.5800 a	0.1960 a	LT 0.0330
03/22/89	20093 20094	RIFS1	GT 0.3470	LT 0.0295	LT 0.0243	0.0459 b	GT 0.3470	LT 0.0417	GT 0.3470	0.5430 a	0.9500 a	0.1350 a	LT 0.0330
03/31/89	20109 20110	RIFS1	0.7370 a	LT 0.0295	LT 0.0243	LT 0.0208	0.8210	LT 0.0417	1.8600 a	0.2620 a	0.3880 a	LT 0.0208	LT 0.0330
03/31/89	20113 20114	RIFS1D	0.8190 a	LT 0.0295	LT 0.0243	0.1030	0.7590	LT 0.0417	1.8600	0.3220 a	0.3850 a	LT 0.0208	LT 0.0330
04/6/89	20116 20117	RIFS1	0.6040 a	LT 0.0295	LT 0.0243	LT 0.0208	0.3960 b	LT 0.0417	0.7020 a	0.2990 a	0.5910 a	LT 0.0208	LT 0.0330
04/7/89	20119 20120	RIFS1	0.3120 a	LT 0.0295	LT 0.0243	LT 0.0208	GT 0.3470	LT 0.0417	0.7760 a	0.2000 a	0.8250 a	LT 0.0208	LT 0.0330
04/11/89	20125 20126	RIFS1	0.9290 a	LT 0.0295	LT 0.0243	LT 0.0208	0.0989	LT 0.0417	2.1900	0.4290 a	0.7260 a	0.1540 a	LT 0.0330
04/14/89	20128 20129	RIFS1	1.1100 a	LT 0.0295	LT 0.0243	LT 0.0208	1.2900	LT 0.0417	2.8400	0.2380	1.0400 a	0.0664 a	LT 0.0330

a - t/c weight >.25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/04/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropene	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
03/10/89	20065	20066	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.8330	11.700	LT 0.0174	LT 0.1020	LT 0.0399	1.1100	LT 0.0330	3.5000
03/16/89	20069	20070	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.8990	8.4200	LT 0.0174	LT 0.1020	LT 0.0399	0.8240	0.1020	3.5200
03/16/89	20073	20074	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	1.0700	8.7900	LT 0.0174	LT 0.1020	LT 0.0399	0.8150	0.0978	4.0700
03/16/89	20077	20078	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.5710	5.7100	LT 0.0174	LT 0.1020	LT 0.0399	0.5000	0.0654	2.2500
03/18/89	20081	20082	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.3930	4.6400	LT 0.0174	LT 0.1020	LT 0.0399	0.3400	LT 0.0330	1.5400
03/18/89	20085	20086	RIFS2	LT 0.0382	LT 0.0451	LT 0.0469	0.2580	2.6900	LT 0.0174	LT 0.1020	LT 0.0399	0.2310	LT 0.0330	1.0600
03/21/89	20089	20090	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.8030	6.0000	LT 0.0174	LT 0.1020	LT 0.0399	0.9490	0.1050	2.8800
03/22/89	20093	20094	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	GT 0.3470	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	GT 0.3470	LT 0.0330	GT 0.6940
03/31/89	20109	20110	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.5710	3.9300	LT 0.0174	LT 0.1020	LT 0.0399	0.5360	LT 0.0330	3.0000
03/31/89	20113	20114	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	0.5860	3.7900	LT 0.0174	LT 0.1020	LT 0.0399	0.4830	LT 0.0330	2.6600
04/6/89	20116	20117	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.2240 b	1.4400 b	LT 0.0174	LT 0.1020	LT 0.0399	0.1050 b	LT 0.0330	1.0700 b
04/7/89	20119	20120	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.5360	4.2900	LT 0.0174	LT 0.1020	LT 0.0399	0.3930	LT 0.0330	0.8210
04/11/89	20125	20126	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.0721	0.5000	LT 0.0174	LT 0.1020	LT 0.0399	0.4320	LT 0.0330	0.2190
04/14/89	20128	20129	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.8930	8.5700	LT 0.0174	LT 0.1020	LT 0.0399	1.5400	LT 0.0330	4.2900

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
04/14/89	20131 20132	RIFS1D	1.2200 a	LT 0.0295	LT 0.0243	LT 0.0208	1.4400	LT 0.0417	3.3500	0.3670 a	1.6600 a	0.0533 b	LT 0.0330
04/19/89	20134 20135	RIFS1	2.7100 a	LT 0.0295	LT 0.0243	LT 0.0208	3.1100	LT 0.0417	2.3600 a	0.3070 a	1.4300 a	0.0404 b	LT 0.0330
04/21/89	20137 20138	RIFS1	1.0300 a	LT 0.0295	LT 0.0243	0.0368	1.0000	LT 0.0417	0.5120 a	0.2230 a	2.8200 a	0.0443 b	LT 0.0330
04/25/89	20143 20144	RIFS1	0.8520 a	LT 0.0295	LT 0.0243	0.0271	0.1940	LT 0.0417	0.8220 a	0.5030 a	3.3200 a	0.1070 b	0.1300
04/25/89	20146 20147	RIFS1D	0.9490 a	LT 0.0295	LT 0.0243	0.0354	0.1760	LT 0.0417	0.8880 a	0.4290 a	0.3350	0.1410 b	0.1160
04/26/89	20149 20150	RIFS1	0.4670 a	LT 0.0295	LT 0.0243	0.0257	0.7500	LT 0.0417	2.6800 a	0.2440	0.9590 a	0.0250	0.1660
05/5/89	20152 20153	RIFS1	1.0500 a	LT 0.0295	LT 0.0243	0.0529 b	0.5510	LT 0.0417	1.4000 a	0.2940 a	0.4040 b	0.0529 b	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
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EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/04/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
04/14/89	20131	20132	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	1.0400	10.400	LT 0.0174	LT 0.1020	LT 0.0399	1.6700	LT 0.0330	5.5600
04/19/89	20134	20135	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	1.4600	18.200	LT 0.0174	LT 0.1020	LT 0.0399	2.1800	0.2090 a	0.7140
04/21/89	20137	20138	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.6430	1.5900	LT 0.0174	LT 0.1020	LT 0.0399	1.0700	LT 0.0330	3.0000
04/25/89	20143	20144	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.1370	1.2700	LT 0.0174	LT 0.1020	LT 0.0399	0.3300	LT 0.0330	GT 0.6940
04/25/89	20146	20147	RIFS1D	LT 0.0382	LT 0.0451	LT 0.0469	0.1250	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.3160	LT 0.0330	0.5190
04/26/89	20149	20150	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.5360	5.0000	LT 0.0174	LT 0.1020	LT 0.0399	0.3860	LT 0.0330	2.1400
05/5/89	20152	20153	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.3540	5.8800	LT 0.0174	LT 0.1020	LT 0.0399	0.7350	0.0926	1.8400

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

Appendix B-2

IRA-F Program Data Listings

Ebasco Services Incorporated
TSP and PM-10 Concentrations.

IRA-F Program
All values are in micrograms per standard cubic meter.

Sample Date	TSP Field Sample Number	Site ID	TSP	PM-10 Field Sample Number	Site ID	PM-10
05/10/89	18361	FC1	42.23			
05/10/89	18362	FC2	37.21			
05/10/89	18363	FC2D	37.99			
05/10/89	18365	BF3	36.72			
05/10/89	18366	BF4	41.54			
05/10/89	18367	BF5	36.24			
05/10/89	18368	BF7	36.54			
05/10/89	18369	RIFS1	50.23			
05/22/89	18371	FC1	47.01			
05/22/89	18372	FC2	49.58			
05/22/89	18373	FC2D	49.97			
05/22/89	18375	BF3	48.06			
05/22/89	18376	BF4	51.15			
05/22/89	18377	BF5	45.58			
05/22/89	18378	BF7	44.53			
05/22/89	18379	RIFS1	51.81			
06/03/89	18381	FC2	11.63			
06/03/89	18389	FC2D	12.89			
06/03/89	18383	BF3	21.48			
06/03/89	18384	BF4	13.23			
06/03/89	18385	BF5	10.85			
06/03/89	18386	BF7	12.59			
06/03/89	18387	RIFS1	12.11			
06/15/89	18391	FC2	37.85			
06/15/89	18392	FC2D	39.31			
06/15/89	18393	BF3	49.56			
06/15/89	18394	FC4	40.34			
06/15/89	18396	BF5	36.58			
06/15/89	18395	FC5	46.30			
06/15/89	18397	BF7	39.35			
06/15/89	18398	RIFS1	40.69			
06/27/89		FC1	N/A	21901	FC1	17.53
06/27/89	18401	FC2	34.91			
06/27/89	18402	FC2D	37.30			
06/27/89	18403	FC3	37.51	21902	FC3	16.26
06/27/89	18404	FC4	38.71			
06/27/89	18405	FC5	45.91			
06/27/89	18406	BF5	43.55			
06/27/89	18407	BF7	38.88			
06/27/89	18408	RIFS1	42.05			
07/09/89	18411	FC2	32.59			
07/09/89	18412	FC2D	36.71			
07/09/89	18413	FC3	37.06	21904	FC3	17.13
07/09/89	18414	FC4	37.48			
07/09/89	18415	FC5	47.61			
07/21/89		FC1	N/A	21905	FC1	34.80
07/21/89	18421	FC2	89.01			
07/21/89	18422	FC2D	96.35			
07/21/89	18423	FC3	93.71	21906	FC3	35.65
07/21/89	18424	FC4	103.39			
07/21/89	18425	FC5	87.08			

Ebasco Services Incorporated
TSP and PM-10 Concentrations.

IRA-F Program
All values are in micrograms per standard cubic meter.

Sample Date	TSP Field Sample Number	Site ID	TSP	PM-10 Field Sample Number	Site ID	PM-10
08/02/89	18431	FC4	39.52			
08/14/89	18434	FC1	43.07		FC1	N/A
08/14/89	18435	FC2	40.10			
08/14/89	18436	FC2D	39.68			
08/14/89	18437	FC3	51.35	21909	FC3	17.79
08/14/89	18438	FC4	40.88			
08/14/89	18439	FC5	51.41			
08/26/89	22706	FC1	47.94	21915	FC1	18.45
08/26/89	22707	FC2	43.82			
08/26/89	22708	FC2D	45.45			
08/26/89	22709	FC3	44.05	21916	FC3	18.49
08/26/89	22710	FC4	47.16			
08/26/89	22711	FC5	68.34			
09/07/89	22717	FC1	104.80	21917	FC1	26.53
09/07/89	22718	FC2	66.67			
09/07/89	22719	FC2D	69.72			
09/07/89	22720	FC3	68.68	21918	FC3	30.64
09/07/89	22721	FC4	70.23			
09/07/89	22722	FC5	76.18			
09/19/89	22724	FC1	33.72	21919	FC1	16.43
09/19/89	22725	FC2	30.31			
09/19/89	22726	FC2D	29.87			
09/19/89	22727	FC3	28.42	21920	FC3	15.29
09/19/89	22728	FC4	30.66			
09/19/89	22729	FC5	31.21			
10/01/89	18441	FC1	78.73	21921	FC1	35.08
10/01/89	18442	FC2	81.20			
10/01/89	18443	FC2D	81.63			
10/01/89	18444	FC3	84.01	21922	FC3	27.45
10/01/89	18445	FC4	70.20			
10/01/89	18446	FC5	78.23			
10/13/89	24932	FC1	55.38	21923	FC1	25.34
10/13/89	24933	FC2	47.82			
10/13/89	24934	FC2D	47.57			
10/13/89	24935	FC3	45.17	21924	FC3	25.48
10/13/89	24936	FC4	48.38			
10/13/89	24937	FC5	52.91			
10/25/89	18690	FC1	114.33	21925	FC1	54.02
10/25/89	18691	FC2	116.69			
10/25/89	18692	FC2D	122.28			
10/25/89	18693	FC3	89.30	21926	FC3	48.82
10/25/89	18694	FC4	92.13			
10/25/89	18695	FC5	135.20			
11/06/89		FC1	N/A	21927	FC1	16.45
11/06/89	18726	FC2	31.76			
11/06/89	18727	FC2D	31.67			
11/06/89	18729	FC4	29.23			
11/06/89	18730	FC5	31.16			

Ebasco Services Incorporated
TSP and PM-10 Concentrations.

IRA-F Program
All values are in micrograms per standard cubic meter.

Sample Date	TSP Field Sample Number	Site ID	TSP	PM-10 Field Sample Number	Site ID	PM-10
11/18/89	18770	FC1	39.29	21930	FC1	19.53
11/18/89	18771	FC2	32.71			
11/18/89	18772	FC2D	34.47			
11/18/89	18773	FC3	32.40	21931	FC3	16.70
11/18/89	18774	FC4	32.43			
11/18/89	18775	FC5	40.92			
11/30/89	24951	FC1	56.63	21932	FC1	31.17
11/30/89	24952	FC2	48.29			
11/30/89	24953	FC2D	49.75			
11/30/89	24954	FC3	48.93		FC3	N/A
11/30/89	24955	FC4	50.20			
11/30/89	24956	FC5	70.67			
12/12/89	24958	FC1	27.04	21934	FC1	14.69
12/12/89	24959	FC2	25.03			
12/12/89	24960	FC2D	26.21			
12/12/89	24961	FC3	25.34	21935	FC3	14.71
12/12/89	24962	FC4	26.53			
12/12/89	24963	FC5	25.53			
12/24/89	24965	FC1	26.16	21936	FC1	15.17
12/24/89	24966	FC2	22.66			
12/24/89	24967	FC2D	25.30			
12/24/89	24968	FC3	27.02	21937	FC3	15.41
12/24/89	24969	FC4	28.27			
01/05/90	24974	FC1	42.19	21938	FC1	22.65
01/05/90	24975	FC2	36.65			
01/05/90	24976	FC2D	37.39			
01/05/90	24977	FC3	36.53	21939	FC3	22.47
01/05/90		FC4	N/A			
01/05/90	24979	FC5	39.53			
01/17/90	24981	FC1	35.07	21940	FC1	13.56
01/17/90	24982	FC2	27.66			
01/17/90	24983	FC2D	21.91			
01/17/90	24984	FC3	29.13	21941	FC3	17.43
01/17/90	24978	FC4	31.23			
01/17/90	24985	FC5	43.03			
01/29/90	24987	FC1	26.54	21942	FC1	10.66
01/29/90	24988	FC2	23.26			
01/29/90	24989	FC2D	22.60			
01/29/90	24990	FC3	18.60	21943	FC3	10.58
01/29/90	24991	FC4	23.55			
01/29/90	24992	FC5	28.70			
02/10/90	24994	FC1	41.27	21944	FC1	13.17
02/10/90	24995	FC2	28.18			
02/10/90	24996	FC2D	27.15			
02/10/90	24997	FC3	13.28	21945	FC3	7.51
02/10/90	24998	FC4	21.20			
02/10/90	27001	FC5	30.58			

Ebasco Services Incorporated
TSP and PM-10 Concentrations.

IRA-F Program
All values are in micrograms per standard cubic meter.

Sample Date	TSP Field Sample Number	Site ID	TSP	PM-10 Field Sample Number	Site ID	PM-10
02/22/90	27003	FC1	28.56	21946	FC1	16.59
02/22/90	27004	FC2	25.52			
02/22/90	27005	FC2D	26.65			
02/22/90	27006	FC3	25.97	21947	FC3	16.38
02/22/90	27007	FC4	27.08			
02/22/90	27008	FC5	25.70			
03/06/90		FC1	N/A	21949	FC1	5.48
03/18/90	27019	FC1	5.88	21951	FC1	19.85
03/18/90	27020	FC2	5.99			
03/18/90	27021	FC2D	6.12			
03/18/90	27022	FC3	5.05		FC3	N/A
03/18/90	27023	FC4	5.87			
03/18/90	27024	FC5	6.88			
03/30/90	27026	FC1	14.36	21953	FC1	16.54
03/30/90	27027	FC2	15.01			
03/30/90	27028	FC2D	15.09			
03/30/90	27029	FC3	12.23	21954	FC3	16.28
03/30/90	27030	FC4	15.70			
03/30/90	27031	FC5	14.86			
04/11/90	27033	FC1	39.63	21955	FC1	27.07
04/11/90	27034	FC2	38.20			
04/11/90	27035	FC2D	39.11			
04/11/90	27036	FC3	38.00	21956	FC3	25.07
04/11/90	27037	FC4	38.74			
04/11/90	27038	FC5	38.91			
04/23/90	27040	FC1	27.88	21957	FC1	15.74
04/23/90	27041	FC2	25.92			
04/23/90	27042	FC2D	27.21			
04/23/90	27043	FC3	24.98	21958	FC3	15.23
04/23/90	27044	FC4	27.17			
04/23/90	27045	FC5	38.70			
05/05/90	27047	FC1	18.31	21959	FC1	11.28
05/05/90	27048	FC2	18.01			
05/05/90	27049	FC2D	19.08			
05/05/90	27050	FC3	19.13	21961	FC3	8.57
05/05/90	27051	FC4	17.27			
05/05/90	27052	FC5	17.76			
05/17/90	27054	FC1	24.60	21962	FC1	14.32
05/17/90	27055	FC2	20.56			
05/17/90	27056	FC2D	20.96			
05/17/90	27057	FC3	20.92	21963	FC3	13.66
05/17/90	27058	FC4	24.16			
05/17/90	27059	FC5	39.20			

Ebasco Services Incorporated
TSP and PM-10 Concentrations.

IRA-F Program
All values are in micrograms per standard cubic meter.

Sample Date	TSP Field Sample Number	Site ID	TSP	PM-10 Field Sample Number	Site ID	PM-10
05/29/90	27061	FC1	22.15	21964	FC1	12.72
05/29/90	27062	FC2	45.81			
05/29/90	27063	FC2D	50.29			
05/29/90	27064	FC3	15.29	21965	FC3	12.45
05/29/90	27065	FC4	45.74			
05/29/90	27066	FC5	35.50			
06/10/90	27068	FC1	33.43	21966	FC1	15.70
06/10/90	27069	FC2	44.71			
06/10/90	27070	FC2D	47.57			
06/10/90	27071	FC3	24.73	21967	FC3	14.68
06/10/90	27072	FC4	35.41			
06/10/90	27073	FC5	52.63			
06/22/90	27075	FC1	72.33	21968	FC1	31.57
06/22/90	27076	FC2	58.26			
06/22/90	27077	FC2D	58.68			
06/22/90	27078	FC3	53.10	21969	FC3	24.29
06/22/90	27079	FC4	62.38			
06/22/90	27080	FC5	66.79			
07/04/90	27082	FC1	33.24	21970	FC1	17.08
07/04/90	27083	FC2	28.06			
07/04/90	27084	FC2D	26.79			
07/04/90	27085	FC3	26.31	21971	FC3	15.97
07/04/90	27086	FC4	28.58			
07/04/90	27087	FC5	38.35			
07/16/90	27089	FC1	56.19	21972	FC1	27.27
07/16/90	27090	FC2	49.23			
07/16/90	27091	FC2D	47.80			
07/16/90	27092	FC3	40.69	21973	FC3	28.68
07/16/90	27093	FC4	51.42			
07/16/90	27094	FC5	79.90			
07/28/90	27096	FC1	48.15	21974	FC1	24.45
07/28/90	27097	FC2	45.80			
07/28/90	27098	FC2D	44.50			
07/28/90	27101	FC3	45.68	21975	FC3	22.75
07/28/90	27102	FC4	43.40			
07/28/90	27103	FC5	49.82			
08/09/90	27106	FC1	78.47	21976	FC1	38.87
08/09/90	27107	FC2	67.30			
08/09/90	27108	FC2D	72.91			
08/09/90	27109	FC3	70.33	21977	FC3	38.07
08/09/90	27110	FC4	86.74			
08/09/90	27111	FC5	84.80			
08/21/90	27113	FC1	52.17	21978	FC1	24.24
08/21/90	27114	FC2	72.28			
08/21/90	27115	FC2D	75.31			
08/21/90	27116	FC3	37.20	21979	FC3	20.97
08/21/90	27117	FC4	44.86			
08/21/90	27118	FC5	68.35			

Ebasco Services Incorporated
TSP and PM-10 Concentrations.

IRA-F Program
All values are in micrograms per standard cubic meter.

Sample Date	TSP Field Sample Number	Site ID	TSP	PM-10 Field Sample Number	Site ID	PM-10
09/02/90	27121	FC1	36.33	21980	FC1	21.31
09/02/90	27122	FC2	37.21			
09/02/90	27123	FC2D	37.75			
09/02/90	27124	FC3	46.60	21981	FC3	25.15
09/02/90	27125	FC4	36.10			
09/02/90	27126	FC5	36.59			
09/14/90	27128	FC1	227.29	21982	FC1	101.64
09/14/90	27129	FC2	219.55			
09/14/90	27130	FC2D	220.16			
09/14/90	27131	FC3	172.75	21983	FC3	87.88
09/14/90	27132	FC4	181.06			
09/14/90	27133	FC5	470.51			
09/26/90	27135	FC1	51.94	21984	FC1	24.25
09/26/90	27136	FC2	33.60			
09/26/90	27137	FC2D	32.21			
09/26/90	27138	FC3	29.41	21985	FC3	18.07
09/26/90	27139	FC4	28.67			
09/26/90	27140	FC5	44.83			

SUMMARY OF ARSENIC AND METALS ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ARSENIC RESULTS	CADMIUM RESULTS	CHROMIUM RESULTS	COPPER RESULTS	LEAD RESULTS	ZINC RESULTS
05/10/89	18361	FC1	0.0006	0.0004	LT 0.0051	0.0772	0.0489	0.0213
05/10/89	18362	FC2	0.0005	LT 0.0004	LT 0.0051	0.0269	0.0493	0.0183
05/10/89	18363	FC2D	0.0005	0.0004	LT 0.0051	0.1180	0.0502	0.0210
05/10/89	18365	BF3	0.0006	LT 0.0004	LT 0.0051	0.1200	0.0475	0.0216
05/10/89	18366	BF4	0.0005	LT 0.0004	LT 0.0051	0.1330	0.0482	0.0218
05/10/89	18367	BF5	0.0005	LT 0.0004	LT 0.0051	0.0736	0.0471	0.0218
05/10/89	18368	BF7	0.0006	0.0006	LT 0.0051	0.1530	0.0411	0.0216
05/10/89	18369	RIFS1	0.0005	0.0005	LT 0.0051	0.2360	0.0401	0.0319
05/22/89	18371	FC1	0.0006	0.0033	LT 0.0051	0.1910	0.0187	0.0272
05/22/89	18372	FC2	0.0006	0.0043	LT 0.0051	0.1610	0.0268	0.0268
05/22/89	18373	FC2D	0.0004	0.0029	LT 0.0051	0.2290	0.0176	0.0280
05/22/89	18375	BF3	0.0005	0.0033	LT 0.0051	0.1370	0.0179	0.0275
05/22/89	18376	BF4	0.0005	0.0040	LT 0.0051	0.1330	0.0208	0.0296
05/22/89	18377	BF5	0.0005	0.0021	LT 0.0051	0.1180	0.0173	0.0233
05/22/89	18378	BF7	0.0006	0.0013	LT 0.0051	0.1940	0.0136	0.0285
05/22/89	18379	RIFS1	0.0006	0.0021	LT 0.0051	0.1030	0.0219	0.0409
06/3/89	18381	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0659	LT 0.0050	0.0084
06/3/89	18383	BF3	LT 0.0004	LT 0.0004	LT 0.0051	0.0922	LT 0.0050	0.0076
06/3/89	18384	BF4	LT 0.0004	LT 0.0004	LT 0.0051	0.0838	LT 0.0050	0.0069
06/3/89	18385	BF5	LT 0.0004	LT 0.0004	LT 0.0051	0.0643	LT 0.0050	0.0393
06/3/89	18386	BF7	LT 0.0004	LT 0.0004	LT 0.0051	0.1150	LT 0.0050	0.0062
06/3/89	18387	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.0611	LT 0.0050	0.0105
06/3/89	18389	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0770	LT 0.0050	0.0095
06/15/89	18391	FC2	LT 0.0004	0.0011	LT 0.0051	0.1220	0.0110	0.0184
06/15/89	18392	FC2D	LT 0.0004	0.0010	LT 0.0051	0.1920	0.0091	0.0186
06/15/89	18393	BF3	LT 0.0004	0.0009	LT 0.0051	0.1420	0.0153	0.0280
06/15/89	18394	FC4	LT 0.0004	0.0007	LT 0.0051	0.1310	0.0109	0.0208
06/15/89	18395	FC5	LT 0.0004	0.0007	LT 0.0051	0.1640	0.0095	0.0196
06/15/89	18396	BF5	LT 0.0004	0.0004	LT 0.0051	0.1750	0.0082	0.0178
06/15/89	18397	BF7	LT 0.0004	0.0006	LT 0.0051	0.1770	0.0113	0.0216
06/15/89	18398	RIFS1	LT 0.0004	0.0004	LT 0.0051	0.1640	0.0115	0.0218
06/27/89	18401	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0953	0.0119	0.0185
06/27/89	18402	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.1690	0.0140	0.0185
06/27/89	18403	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0823	0.0126	0.0234
06/27/89	18404	FC4	0.0004	LT 0.0004	LT 0.0051	0.1080	0.0142	0.0255
06/27/89	18405	FC5	0.0004	LT 0.0004	LT 0.0051	0.2160	0.0141	0.0292
06/27/89	18406	BF5	LT 0.0004	LT 0.0004	LT 0.0051	0.1430	0.0130	0.0228
06/27/89	18407	BF7	LT 0.0004	LT 0.0004	LT 0.0051	0.0938	0.0137	0.0205
06/27/89	18408	RIFS1	LT 0.0004	LT 0.0004	LT 0.0051	0.1170	0.0156	0.0465
07/9/89	18411	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.1520	0.0067	0.0200
07/9/89	18412	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	GT 0.3070	LT 0.0050	0.0232
07/9/89	18413	FC3	0.0004	LT 0.0004	LT 0.0051	0.1210	0.0053	0.0127
07/9/89	18414	FC4	0.0004	LT 0.0004	LT 0.0051	0.1490	0.0071	0.0178
07/9/89	18415	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.2090	0.0064	0.0350
07/21/89	18421	FC2	0.0005	LT 0.0004	LT 0.0051	0.0746	0.0050	0.0140
07/21/89	18422	FC2D	0.0004	LT 0.0004	LT 0.0051	0.1150	0.0089	0.0178
07/21/89	18423	FC3	0.0004	LT 0.0004	LT 0.0051	0.0675	0.0069	0.0204
07/21/89	18424	FC4	0.0005	LT 0.0004	LT 0.0051	0.0588	0.0085	0.0179
07/21/89	18425	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0983	0.0091	0.0272
08/14/89	18434	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.1620	0.0090	0.0165
08/14/89	18435	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0709	0.0083	0.0213

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

SUMMARY OF ARSENIC AND METALS ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ARSENIC RESULTS	CADMIUM RESULTS	CHROMIUM RESULTS	COPPER RESULTS	LEAD RESULTS	ZINC RESULTS
08/14/89	18436	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0563	0.0068	0.0196
08/14/89	18437	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.1030	0.0095	0.0217
08/14/89	18438	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0796	0.0063	0.0168
08/14/89	18439	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0707	0.0071	0.0176
10/1/89	18441	FC1	0.0005	0.0025	LT 0.0051	0.0770	0.0110	0.0240
10/1/89	18442	FC2	0.0004	0.0007	LT 0.0051	0.0990	0.0074	0.0190
10/1/89	18443	FC2D	0.0004	0.0006	LT 0.0051	0.0560	0.0089	0.0220
10/1/89	18444	FC3	0.0006	0.0007	LT 0.0051	0.0780	0.0077	0.0250
10/1/89	18445	FC4	0.0005	0.0004	LT 0.0051	0.0600	0.0087	0.0210
10/1/89	18446	FC5	0.0004	0.0004	LT 0.0051	0.0950	0.0180	0.0180
10/25/89	18690	FC1	0.0009	LT 0.0004	LT 0.0051	0.1100	0.0360	0.0600
10/25/89	18691	FC2	0.0010	LT 0.0004	LT 0.0051	0.1400	0.0380	0.0600
10/25/89	18692	FC2D	0.0010	0.0004	LT 0.0051	0.0760	0.0360	0.0610
10/25/89	18693	FC3	0.0008	0.0007	LT 0.0051	0.0700	0.0440	0.0670
10/25/89	18694	FC4	0.0010	LT 0.0004	LT 0.0051	0.1400	0.0420	0.0730
10/25/89	18695	FC5	0.0012	LT 0.0004	LT 0.0051	0.1500	0.0410	0.0710
11/6/89	18726	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.1200	0.0120	0.0440
11/6/89	18727	FC2D	0.0006	LT 0.0004	LT 0.0051	0.0570	0.0130	0.0400
11/6/89	18729	FC4	0.0005	LT 0.0004	LT 0.0051	0.0670	0.0120	0.0420
11/6/89	18730	FC5	0.0005	LT 0.0004	LT 0.0051	0.0950	0.0110	0.0400
11/18/89	18770	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.2600	0.0130	0.0240
11/18/89	18771	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.1600	0.0120	0.0220
11/18/89	18772	FC2D	0.0004	LT 0.0004	LT 0.0051	0.1100	0.0100	0.0240
11/18/89	18773	FC3	0.0004	LT 0.0004	LT 0.0051	0.0490	0.0140	0.0220
11/18/89	18774	FC4	0.0072	LT 0.0004	LT 0.0051	0.1000	0.0140	0.0230
11/18/89	18775	FC5	0.0005	LT 0.0004	LT 0.0051	0.1100	0.0170	0.0240
11/30/89	24951	FC1	0.0004	LT 0.0004	LT 0.0051	0.1400	0.0300	0.0490
11/30/89	24952	FC2	0.0004	LT 0.0004	LT 0.0051	0.2100	0.0270	0.0430
11/30/89	24953	FC2D	0.0005	LT 0.0004	LT 0.0051	0.1500	0.0290	0.0460
11/30/89	24954	FC3	0.0005	LT 0.0004	LT 0.0051	0.0980	0.0280	0.0450
11/30/89	24955	FC4	0.0005	LT 0.0004	LT 0.0051	0.1200	0.0300	0.0480
11/30/89	24956	FC5	0.0004	LT 0.0004	LT 0.0051	0.0890	0.0290	0.0510
12/12/89	24958	FC1	0.0005	0.0033	LT 0.0051	0.0420	0.0120	0.0290
12/12/89	24959	FC2	0.0004	0.0038	LT 0.0051	0.0560	0.0140	0.0300
12/12/89	24960	FC2D	LT 0.0004	0.0040	LT 0.0051	0.0530	0.0120	0.0250
12/12/89	24961	FC3	0.0004	0.0042	LT 0.0051	0.0170	0.0130	0.0260
12/12/89	24962	FC4	0.0007	0.0035	LT 0.0051	0.0560	0.0120	0.0250
12/12/89	24963	FC5	0.0004	0.0028	LT 0.0051	0.0260	0.0150	0.0210
12/24/89	24965	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.1100	0.0130	0.0120
12/24/89	24966	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0620	0.0110	0.0110
12/24/89	24967	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.1600	0.0080	0.0100
12/24/89	24968	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0880	0.0130	0.0110
12/24/89	24969	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.1300	0.0120	0.0130
01/5/90	24974	FC1	0.0006	LT 0.0004	LT 0.0051	0.0800	0.0160	0.0260
01/5/90	24975	FC2	0.0005	LT 0.0004	LT 0.0051	0.0960	0.0140	0.0240
01/5/90	24976	FC2D	0.0005	LT 0.0004	LT 0.0051	0.0870	0.0170	0.0230
01/5/90	24977	FC3	0.0006	LT 0.0004	LT 0.0051	0.0360	0.0160	0.0250
01/5/90	24979	FC5	0.0006	LT 0.0004	LT 0.0051	0.0430	0.0160	0.0230
01/17/90	24978	FC4	0.0036	LT 0.0004	LT 0.0051	0.0800	0.0150	0.0270
01/17/90	24981	FC1	0.0031	LT 0.0004	LT 0.0051	0.0610	0.0130	0.0270
01/17/90	24982	FC2	0.0035	LT 0.0004	LT 0.0051	0.0620	0.0120	0.0220

EBASCO SERVICES INCORPORATED — ROCKY MOUNTAIN ARSENAL PROGRAM — 04/05/91

SUMMARY OF ARSENIC AND METALS — ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ARSENIC RESULTS	CADMIUM RESULTS	CHROMIUM RESULTS	COPPER RESULTS	LEAD RESULTS	ZINC RESULTS
01/17/90	24983	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0450	0.0059	0.0130
01/17/90	24984	FC3	0.0040	LT 0.0004	LT 0.0051	0.0490	0.0110	0.0230
01/17/90	24985	FC5	0.0030	LT 0.0004	LT 0.0051	0.0360	0.0130	0.0250
01/29/90	24987	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.0340	0.0048	0.0160
01/29/90	24988	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0480	0.0076	0.0130
01/29/90	24989	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0390	LT 0.0050	0.0130
01/29/90	24990	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0180	LT 0.0050	0.0110
01/29/90	24991	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0530	0.0060	0.0150
01/29/90	24992	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0270	LT 0.0050	0.0160
02/10/90	24994	FC1	0.0004	LT 0.0004	LT 0.0051	0.0260	0.0063	0.0170
02/10/90	24995	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0310	0.0072	0.0160
02/10/90	24996	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0300	0.0061	0.0150
02/10/90	24997	FC3	LT 0.0004	LT 0.0004	LT 0.0051	LT 0.0087	LT 0.0050	0.0110
02/10/90	24998	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0250	LT 0.0050	0.0120
02/10/90	27001	FC5	0.0007	LT 0.0004	LT 0.0051	0.0170	0.0072	0.0140
02/22/90	27003	FC1	0.0013	LT 0.0004	LT 0.0051	0.0730	0.0120	0.0240
02/22/90	27004	FC2	0.0013	LT 0.0004	LT 0.0051	0.0910	0.0110	0.0220
02/22/90	27005	FC2D	0.0016	LT 0.0004	LT 0.0051	[illegible]	0.0130	0.0220
02/22/90	27006	FC3	0.0016	LT 0.0004	LT 0.0051	0.0290	0.0140	0.0220
02/22/90	27007	FC4	0.0014	LT 0.0004	LT 0.0051	0.0870	0.0093	0.0350
02/22/90	27008	FC5	0.0012	LT 0.0004	LT 0.0051	0.0330	0.0120	0.0190
03/6/90	27012	FC1	LT 0.0004	LT 0.0004	LT 0.0051	LT 0.0087	LT 0.0050	0.0033
03/6/90	27013	FC2	LT 0.0004	LT 0.0004	LT 0.0051	LT 0.0087	LT 0.0050	0.0035
03/6/90	27014	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	LT 0.0087	LT 0.0050	0.0037
03/6/90	27015	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0069	LT 0.0050	0.0041
03/6/90	27016	FC4	LT 0.0004	LT 0.0004	LT 0.0051	LT 0.0087	LT 0.0050	0.0052
03/6/90	27017	FC5	LT 0.0004	LT 0.0004	LT 0.0051	LT 0.0087	LT 0.0050	0.0036
03/18/90	27019	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.0740	LT 0.0050	LT 0.0035
03/18/90	27020	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0450	LT 0.0050	LT 0.0035
03/18/90	27021	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0610	LT 0.0050	0.0056
03/18/90	27022	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0200	LT 0.0050	LT 0.0035
03/18/90	27023	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0390	LT 0.0050	0.0033
03/18/90	27024	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0800	LT 0.0050	0.0053
03/30/90	27026	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.1100	0.0075	0.0120
03/30/90	27027	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0510	0.0072	0.0120
03/30/90	27028	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0990	0.0055	0.0120
03/30/90	27029	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0320	0.0085	0.0110
03/30/90	27030	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0640	LT 0.0050	0.0120
03/30/90	27031	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.1200	0.0079	0.0130
04/11/90	27033	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.0420	LT 0.0050	0.0120
04/11/90	27034	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0390	LT 0.0050	0.0140
04/11/90	27035	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0580	LT 0.0050	0.0130
04/11/90	27036	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0340	LT 0.0050	0.0120
04/11/90	27037	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0290	0.0052	0.0140
04/11/90	27038	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0670	LT 0.0050	0.0130
04/23/90	27040	FC1	0.0005	0.0004	LT 0.0051	0.0870	0.0070	0.0160
04/23/90	27041	FC2	0.0007	LT 0.0004	LT 0.0051	0.0490	LT 0.0050	0.0160
04/23/90	27042	FC2D	0.0007	LT 0.0004	LT 0.0051	0.1100	0.0057	0.0190
04/23/90	27043	FC3	0.0006	LT 0.0004	LT 0.0051	0.0580	0.0058	0.0160
04/23/90	27044	FC4	0.0005	LT 0.0004	LT 0.0051	0.0640	0.0094	0.0170
04/23/90	27045	FC5	0.0006	LT 0.0004	LT 0.0051	0.0650	0.0055	0.0200

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SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ARSENIC RESULTS	CADMIUM RESULTS	CHROMIUM RESULTS	COPPER RESULTS	LEAD RESULTS	ZINC RESULTS
05/5/90	27047	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.1100	0.0065	0.0140
05/5/90	27048	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0840	0.0052	0.0130
05/5/90	27049	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.1400	0.0049	0.0170
05/5/90	27050	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0520	0.0059	0.0210
05/5/90	27051	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0550	0.0082	0.0260
05/5/90	27052	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.1000	0.0054	0.0190
05/17/90	27054	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.1200	0.0056	0.0140
05/17/90	27055	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0970	0.0073	0.0200
05/17/90	27056	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.1900	0.0052	0.0170
05/17/90	27057	FC3	0.0006	LT 0.0004	LT 0.0051	0.0670	0.0071	0.0310
05/17/90	27058	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0850	0.0065	0.0340
05/17/90	27059	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0910	0.0054	0.0210
05/29/90	27061	FC1	0.0005	LT 0.0004	LT 0.0051	0.0690	0.0063	0.0150
05/29/90	27062	FC2	0.0007	LT 0.0004	LT 0.0051	0.0780	0.0074	0.0150
05/29/90	27063	FC2D	0.0006	LT 0.0004	LT 0.0051	0.1200	LT 0.0050	0.0150
05/29/90	27064	FC3	0.0006	LT 0.0004	LT 0.0051	0.0350	0.0081	0.0110
05/29/90	27065	FC4	0.0006	LT 0.0004	LT 0.0051	0.0630	0.0048	0.0110
05/29/90	27066	FC5	0.0006	LT 0.0004	LT 0.0051	0.0900	0.0080	0.0500
06/10/90	27068	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.0540	0.0059	0.0110
06/10/90	27069	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0380	LT 0.0050	0.0110
06/10/90	27070	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0850	0.0054	0.0130
06/10/90	27071	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0530	0.0047	0.0100
06/10/90	27072	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0320	0.0049	0.0120
06/10/90	27073	FC5	0.0004	LT 0.0004	LT 0.0051	0.0580	LT 0.0050	0.0170
06/22/90	27075	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.1500	0.0050	0.0150
06/22/90	27076	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0880	LT 0.0050	0.0190
06/22/90	27077	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0930	0.0094	0.0140
06/22/90	27078	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0840	0.0055	0.0130
06/22/90	27079	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0790	0.0050	0.0170
06/22/90	27080	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0650	0.0065	0.0180
07/4/90	27082	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.1400	LT 0.0050	0.0072
07/4/90	27083	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.0820	0.0075	0.0086
07/4/90	27084	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.1000	LT 0.0050	0.0081
07/4/90	27085	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0450	0.0050	0.0080
07/4/90	27086	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0900	LT 0.0050	0.0083
07/4/90	27087	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0910	LT 0.0050	0.0110
07/16/90	27089	FC1	LT 0.0004	0.0005	LT 0.0051	0.1100	0.0130	0.0260
07/16/90	27090	FC2	LT 0.0004	0.0004	LT 0.0051	0.0990	0.0120	0.0300
07/16/90	27091	FC2D	LT 0.0004	0.0004	LT 0.0051	0.0710	0.0130	0.0270
07/16/90	27092	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0410	0.0110	0.0210
07/16/90	27093	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0620	0.0120	0.0290
07/16/90	27094	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0510	0.0130	0.0300
07/28/90	27096	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.0780	0.0065	0.0190
07/28/90	27097	FC2	LT 0.0004	0.0006	LT 0.0051	0.0710	0.0079	0.0180
07/28/90	27098	FC2D	LT 0.0004	0.0013	LT 0.0051	0.1000	0.0086	0.0140
07/28/90	27101	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0440	0.0110	0.0170
07/28/90	27102	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0550	0.0110	0.0180
07/28/90	27103	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0530	0.0100	0.0170
08/9/90	27106	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.2300	0.0100	0.0300
08/9/90	27107	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.1800	0.0095	0.0290
08/9/90	27108	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.1900	0.0130	0.0310

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08/9/90	27109	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0650	0.0110	0.0280
08/9/90	27110	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0660	0.0120	0.0290
08/9/90	27111	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0790	0.0110	0.0320
08/22/90	27113	FC1	0.0008	LT 0.0004	LT 0.0051	0.1500	0.0130	0.0360
08/22/90	27114	FC2	0.0008	LT 0.0004	LT 0.0051	0.1700	0.0130	0.0410
08/22/90	27115	FC2D	0.0010	LT 0.0004	LT 0.0051	0.1400	0.0160	0.0360
08/22/90	27116	FC3	0.0007	0.0004	LT 0.0051	0.0820	0.0120	0.0320
08/22/90	27117	FC4	0.0008	0.0004	LT 0.0051	0.1000	0.0140	0.0370
08/22/90	27118	FC5	0.0009	LT 0.0004	LT 0.0051	0.0880	0.0130	0.0360
09/2/90	27121	FC1	LT 0.0004	LT 0.0004	LT 0.0051	0.1100	LT 0.0050	0.0190
09/2/90	27122	FC2	LT 0.0004	LT 0.0004	LT 0.0051	0.1100	0.0056	0.0190
09/2/90	27123	FC2D	LT 0.0004	LT 0.0004	LT 0.0051	0.0860	0.0067	0.0140
09/2/90	27124	FC3	LT 0.0004	LT 0.0004	LT 0.0051	0.0460	0.0050	0.0150
09/2/90	27125	FC4	LT 0.0004	LT 0.0004	LT 0.0051	0.0930	0.0057	0.0160
09/2/90	27126	FC5	LT 0.0004	LT 0.0004	LT 0.0051	0.0600	0.0059	0.0150
09/14/90	27128	FC1	0.0012	LT 0.0004	0.0052	0.1200	0.0130	0.0430
09/14/90	27129	FC2	0.0010	LT 0.0004	0.0051	0.1500	0.0130	0.0470
09/14/90	27130	FC2D	0.0011	LT 0.0004	LT 0.0051	0.1100	0.0120	0.0400
09/14/90	27131	FC3	0.0009	LT 0.0004	LT 0.0051	0.0670	0.0130	0.0390
09/14/90	27132	FC4	0.0010	LT 0.0004	LT 0.0051	0.1400	0.0120	0.0390
09/14/90	27133	FC5	0.0023	LT 0.0004	0.0150	0.0940	0.0160	0.0650
09/26/90	27135	FC1	LT 0.0004	0.0016	LT 0.0051	0.1100	0.0110	0.0250
09/26/90	27136	FC2	LT 0.0004	0.0017	LT 0.0051	0.1200	0.0120	0.0250
09/26/90	27137	FC2D	LT 0.0004	0.0017	LT 0.0051	0.1000	0.0110	0.0230
09/26/90	27138	FC3	LT 0.0004	0.0018	LT 0.0051	0.0630	0.0100	0.0220
09/26/90	27139	FC4	LT 0.0004	0.0018	LT 0.0051	0.1100	0.0120	0.0220
09/26/90	27140	FC5	LT 0.0004	0.0014	LT 0.0051	0.0830	0.0100	0.0220

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05/10/89	20157	FC1	LT 0.6180
05/10/89	20160	FC2	LT 0.6180
05/10/89	20163	FC2D	LT 0.6180
05/10/89	20169	BF3	LT 0.6180
05/10/89	20172	BF4	LT 0.6180
05/10/89	20175	BF5	LT 0.6180
05/10/89	20178	BF7	LT 0.6180
05/10/89	20181	RIFS1	LT 0.6180
05/16/89	23001	FC1	LT 0.6180
05/16/89	23004	FC2	LT 0.6180
05/16/89	23007	BF3	LT 0.6180
05/16/89	23010	BF4	LT 0.6180
05/16/89	23013	BF5	LT 0.6180
05/16/89	23016	BF7	LT 0.6180
05/16/89	23019	RIFS1	LT 0.6180
05/22/89	23025	FC1	LT 0.6180
05/22/89	23028	FC2	LT 0.6180
05/22/89	23031	FC2D	LT 0.6180
05/22/89	23037	BF3	LT 0.6180
05/22/89	23040	BF4	LT 0.6180
05/22/89	23043	BF5	LT 0.6180
05/22/89	23046	BF7	LT 0.6180
05/22/89	23049	RIFS1	LT 0.6180
05/28/89	23052	FC1	LT 0.6180
05/28/89	23055	FC2	LT 0.6180
05/28/89	23058	BF3	LT 0.6180
05/28/89	23061	BF4	LT 0.6180
05/28/89	23064	BF5	LT 0.6180
05/28/89	23067	BF7	LT 0.6180
05/28/89	23070	RIFS1	LT 0.6180
06/3/89	23079	FC2	LT 0.6180
06/3/89	23082	FC2D	LT 0.6180
06/3/89	23085	BF3	LT 0.6180
06/3/89	23088	BF4	LT 0.6180
06/3/89	23091	BF5	LT 0.6180
06/3/89	23094	BF7	LT 0.6180
06/3/89	23097	RIFS1	LT 0.6180
06/9/89	23103	FC1	LT 0.6180
06/9/89	23106	FC2	LT 0.6180
06/9/89	23109	BF3	LT 0.6180
06/9/89	23112	BF4	LT 0.6180
06/9/89	23115	BF5	LT 0.6180
06/9/89	23118	BF7	LT 0.6180
06/9/89	23121	RIFS1	LT 0.6180
06/15/89	23127	FC2	LT 0.6180
06/15/89	23130	FC2D	LT 0.6180
06/15/89	23133	BF3	LT 0.6180
06/15/89	23136	BF4	LT 0.6180
06/15/89	23139	FC5	LT 0.6180
06/15/89	23142	BF5	LT 0.6180
06/15/89	23145	BF7	LT 0.6180

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06/15/89	23148	RIFS1	LT 0.6180
06/21/89	23154	FC1	LT 0.6180
06/21/89	23157	FC2	LT 0.6180
06/21/89	23160	BF3	LT 0.6180
06/21/89	23163	FC4	LT 0.6180
06/21/89	23166	FC5	LT 0.6180
06/21/89	23169	BF5	LT 0.6180
06/21/89	23172	BF7	LT 0.6180
06/21/89	23175	RIFS1	LT 0.6180
06/27/89	23181	FC1	LT 0.6180
06/27/89	23184	FC2	LT 0.6180
06/27/89	23187	FC2D	LT 0.6180
06/27/89	23190	FC3	LT 0.6180
06/27/89	23193	FC4	LT 0.6180
06/27/89	23196	FC5	LT 0.6180
06/27/89	23199	BF5	LT 0.6180
06/27/89	23202	BF7	LT 0.6180
06/27/89	23205	RIFS1	LT 0.6180
07/9/89	23223	FC2	LT 0.6180
07/9/89	23226	FC2D	LT 0.6180
07/9/89	23229	FC3	LT 0.6180
07/9/89	23232	FC4	LT 0.6180
07/9/89	23235	FC5	LT 0.6180
07/21/89	23253	FC1	LT 0.6200
07/21/89	23256	FC2	LT 0.6200
07/21/89	23259	FC2D	LT 0.6200
07/21/89	23262	FC3	LT 0.6200
07/21/89	23265	FC4	LT 0.6200
07/21/89	23268	FC5	LT 0.6200
08/14/89	23301	FC1	LT 0.6180
08/14/89	23304	FC2	LT 0.6180
08/14/89	23307	FC2D	LT 0.6180
08/14/89	23310	FC3	LT 0.6180
08/14/89	23313	FC4	LT 0.6180
08/14/89	23316	FC5	LT 0.6180
08/26/89	23330	FC1	LT 0.6180
08/26/89	23331	FC2	LT 0.6180
08/26/89	23332	FC2D	LT 0.6180
08/26/89	23333	FC3	LT 0.6180
08/26/89	23334	FC4	LT 0.6180
08/26/89	23335	FC5	LT 0.6180
09/7/89	23363	FC1	LT 0.6180
09/7/89	23366	FC2	LT 0.6180
09/7/89	23369	FC2D	LT 0.6180
09/7/89	23372	FC3	LT 0.6180
09/7/89	23375	FC4	LT 0.6180
09/7/89	23378	FC5	LT 0.6180
09/19/89	23396	FC1	LT 0.6180
09/19/89	23399	FC2	LT 0.6180
09/19/89	23402	FC2D	LT 0.6180
09/19/89	23405	FC3	LT 0.6180

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09/19/89	23408	FC4	LT	0.6180
09/19/89	23411	FC5	LT	0.6180
10/1/89	23429	FC1	LT	0.6200
10/1/89	23432	FC2	LT	0.6200
10/1/89	23435	FC2D	LT	0.6200
10/1/89	23438	FC3	LT	0.6200
10/1/89	23441	FC4	LT	0.6200
10/1/89	23444	FC5	LT	0.6200
10/13/89	23465	FC1	LT	0.6200
10/13/89	23468	FC2	LT	0.6200
10/13/89	23471	FC2D	LT	0.6200
10/13/89	23474	FC3	LT	0.6200
10/13/89	23477	FC4	LT	0.6200
10/13/89	23480	FC5	LT	0.6200
10/25/89	23498	FC1	LT	0.6200
10/25/89	23501	FC2	LT	0.6200
10/25/89	23504	FC2D	LT	0.6200
10/25/89	23507	FC3	LT	0.6200
10/25/89	23510	FC4	LT	0.6200
10/25/89	23513	FC5	LT	0.6200
11/6/89	23531	FC1	LT	0.6200
11/6/89	23534	FC2	LT	0.6200
11/6/89	23537	FC2D	LT	0.6200
11/6/89	23540	FC4	LT	0.6200
11/6/89	23543	FC5	LT	0.6200
11/18/89	23559	FC1	LT	0.6200
11/18/89	23562	FC2	LT	0.6200
11/18/89	23565	FC2D	LT	0.6200
11/18/89	23568	FC3	LT	0.6200
11/18/89	23571	FC4	LT	0.6200
11/18/89	23574	FC5	LT	0.6200
12/12/89	23618	FC1	LT	0.6200
12/12/89	23621	FC2	LT	0.6200
12/12/89	23624	FC2D	LT	0.6200
12/12/89	23627	FC3	LT	0.6200
12/12/89	23630	FC4	LT	0.6200
12/12/89	23633	FC5	LT	0.6200
12/24/89	23651	FC1	LT	0.6200
12/24/89	23654	FC2	LT	0.6200
12/24/89	23657	FC2D	LT	0.6200
12/24/89	23660	FC3	LT	0.6200
12/24/89	23663	FC4	LT	0.6200
12/24/89	23666	FC5	LT	0.6200
01/5/90	23684	FC1	LT	0.6200
01/5/90	23687	FC2	LT	0.6200
01/5/90	23690	FC2D	LT	0.6200
01/5/90	23693	FC3	LT	0.6200
01/5/90	23696	FC4	LT	0.6200
01/5/90	23699	FC5	LT	0.6200
01/17/90	23721	FC1	LT	0.6200
01/17/90	23728	FC3	LT	0.6200

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01/17/90	23731	FC4	LT 0.6200
01/17/90	23734	FC5	LT 0.6200
03/6/90	23832	FC1	LT 0.6200
03/6/90	23835	FC2	LT 0.6200
03/6/90	23841	FC3	LT 0.6200
03/6/90	23844	FC4	LT 0.6200
03/6/90	23847	FC5	LT 0.6200
03/18/90	23871	FC1	LT 0.6200
03/18/90	23874	FC2	LT 0.6200
03/18/90	23877	FC2D	LT 0.6200
03/18/90	23880	FC3	LT 0.6200
03/18/90	23883	FC4	LT 0.6200
03/18/90	23886	FC5	LT 0.6200
03/30/90	23902	FC1	LT 0.6200
03/30/90	23903	FC2	LT 0.6200
03/30/90	23904	FC2D	LT 0.6200
03/30/90	23905	FC3	LT 0.6200
03/30/90	23906	FC4	LT 0.6200
03/30/90	23907	FC5	LT 0.6200
04/11/90	23923	FC1	LT 0.6200
04/11/90	23926	FC2	LT 0.6200
04/11/90	23929	FC2D	LT 0.6200
04/11/90	23932	FC3	LT 0.6200
04/11/90	23935	FC4	LT 0.6200
04/11/90	23938	FC5	LT 0.6200
04/23/90	23956	FC1	LT 0.6200
04/23/90	23959	FC2	LT 0.6200
04/23/90	23962	FC2D	LT 0.6200
04/23/90	23965	FC3	LT 0.6200
04/23/90	23968	FC4	LT 0.6200
04/23/90	23971	FC5	LT 0.6200
05/5/90	23989	FC1	LT 0.6200
05/5/90	23992	FC2	LT 0.6200
05/5/90	23995	FC2D	LT 0.6200
05/5/90	23998	FC3	LT 0.6200
05/5/90	24001	FC4	LT 0.6200
05/5/90	24004	FC5	LT 0.6200
05/17/90	24022	FC1	LT 0.6200
05/17/90	24025	FC2	LT 0.6200
05/17/90	24028	FC2D	LT 0.6200
05/17/90	24031	FC3	LT 0.6200
05/17/90	24034	FC4	LT 0.6200
05/17/90	24037	FC5	LT 0.6200
05/29/90	24055	FC1	LT 0.6200
05/29/90	24058	FC2	LT 0.6200
05/29/90	24061	FC2D	LT 0.6200
05/29/90	24064	FC3	LT 0.6200
05/29/90	24067	FC4	LT 0.6200
05/29/90	24070	FC5	LT 0.6200
06/10/90	24094	FC1	LT 0.6200
06/10/90	24097	FC2	LT 0.6200

EBASCO SERVICES INCORPORATED   ROCKY MOUNTAIN ARSENAL PROGRAM   04/05/91

SUMMARY OF MERCURY   ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	MERCURY RESULTS	
06/10/90	24100	FC2D	LT	0.6200
06/10/90	24103	FC3	LT	0.6200
06/10/90	24106	FC4	LT	0.6200
06/10/90	24109	FC5	LT	0.6200
06/22/90	24127	FC1		2.7000
06/22/90	24130	FC2	LT	0.6200
06/22/90	24133	FC2D	LT	0.6200
06/22/90	24136	FC3		0.9800
06/22/90	24139	FC4	LT	0.6200
06/22/90	24142	FC5	LT	0.6200
07/4/90	24160	FC1	LT	0.6200
07/4/90	24163	FC2		0.8900
07/4/90	24166	FC2D		1.2000
07/4/90	24169	FC3	LT	0.6200
07/4/90	24172	FC4	LT	0.6200
07/4/90	24175	FC5		1.0000
07/16/90	24193	FC1	LT	0.6200
07/16/90	24196	FC2		0.9400
07/16/90	24199	FC2D	LT	0.6200
07/16/90	24202	FC3		1.0000
07/16/90	24205	FC4	LT	0.6200
07/16/90	24208	FC5	LT	0.6200
07/28/90	24226	FC1	LT	0.6200
07/28/90	24229	FC2	LT	0.6200
07/28/90	24232	FC2D	LT	0.6200
07/28/90	24235	FC3		1.0000
07/28/90	24238	FC4	LT	0.6200
07/28/90	24241	FC5	LT	0.6200
08/9/90	24259	FC1	LT	0.6200
08/9/90	24262	FC2	LT	0.6200
08/9/90	24265	FC2D	LT	0.6200
08/9/90	24268	FC3		1.1000
08/9/90	24269	FC4		1.0000
08/9/90	24272	FC5	LT	0.6200
08/22/90	24288	FC1	LT	0.6200
08/22/90	24289	FC2	LT	0.6200
08/22/90	24290	FC2D	LT	0.6200
08/22/90	24291	FC3	LT	0.6200
08/22/90	24292	FC4	LT	0.6200
08/22/90	24293	FC5	LT	0.6200
09/2/90	24323	FC1	LT	0.6200
09/2/90	24326	FC2		0.7800
09/2/90	24329	FC2D		2.6000
09/2/90	24332	FC3	LT	0.6200
09/2/90	24335	FC4	LT	0.6200
09/2/90	24338	FC5	LT	0.6200
09/14/90	24356	FC1		1.2000
09/14/90	24359	FC2	LT	0.6200
09/14/90	24362	FC2D		0.9000
09/14/90	24365	FC3		0.7400
09/14/90	24368	FC4		0.8800

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

SUMMARY OF MERCURY ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID		MERCURY RESULTS
09/14/90	24371	FC5	LT	0.6200
09/26/90	24389	FC1	LT	0.6200
09/26/90	24392	FC2	LT	0.6200
09/26/90	24395	FC2D	LT	0.6200
09/26/90	24398	FC3		0.7800
09/26/90	24401	FC4		2.0000
09/26/90	24404	FC5		0.9100

EBASCO SERVICES INCORPORATED   ROCKY MOUNTAIN ARSENAL PROGRAM   04/05/91

SUMMARY OF ORGANO CHLORINE PESTICIDE CONCENTRATIONS   ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
05/10/89	16105	FC1	0.0041	0.0010	0.0130	0.0014	0.0005	LT 0.0003	LT 0.0003
05/10/89	16106	FC2	0.0103	0.0011	0.0293	0.0032	0.0011	LT 0.0003	LT 0.0003
05/10/89	16107	FC2D	0.0088	0.0010	0.0296	0.0034	0.0106	LT 0.0003	LT 0.0003
05/10/89	16109	BF3	0.0009	0.0007	0.0092	0.0010	LT 0.0003	LT 0.0003	LT 0.0003
05/10/89	16110	BF4	0.0007	0.0010	0.0150	0.0019	0.0005	LT 0.0003	LT 0.0003
05/10/89	16111	BF7	LT 0.0003	LT 0.0004	0.0009	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
05/10/89	16112	RIFS1	LT 0.0003	LT 0.0004	0.0009	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
05/10/89	16113	BF5	0.0003	LT 0.0004	0.0016	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
05/16/89	16115	FC1	0.0009	0.0004	0.0006	0.0007	LT 0.0003	LT 0.0003	LT 0.0003
05/16/89	22001	FC2	0.0029	0.0005	0.0151	0.0017	0.0004	LT 0.0003	LT 0.0003
05/16/89	22002	BF3	0.0010	0.0008	0.0133	0.0013	0.0004	LT 0.0003	0.0004
05/16/89	22003	BF4	0.0012	0.0006	0.0096	0.0015	LT 0.0003	LT 0.0003	LT 0.0003
05/16/89	22004	BF5	0.0004	LT 0.0004	0.0022	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
05/16/89	22005	BF7	0.0004	0.0006	0.0033	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
05/16/89	22006	RIFS1	LT 0.0003	LT 0.0004	0.0007	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
05/22/89	22008	FC1	LT 0.0003	LT 0.0004	0.0035	0.0007	LT 0.0003	LT 0.0003	LT 0.0003
05/22/89	22009	FC2	0.0006	0.0004	0.0074	0.0012	0.0007	LT 0.0003	0.0004
05/22/89	22010	FC2D	0.0004	0.0005	0.0070	0.0010	0.0006	LT 0.0003	LT 0.0003
05/22/89	22012	BF3	LT 0.0003	0.0003	0.0022	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
05/22/89	22013	BF4	LT 0.0003	LT 0.0004	0.0018	0.0005	LT 0.0003	LT 0.0003	LT 0.0003
05/22/89	22014	BF5	LT 0.0003	LT 0.0004	0.0014	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
05/22/89	22015	BF7	LT 0.0003	LT 0.0004	0.0011	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
05/22/89	22016	RIFS1	LT 0.0003	LT 0.0004	0.0004	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
05/28/89	22017	FC1	LT 0.0003	0.0004	0.0037	0.0007	LT 0.0003	LT 0.0003	LT 0.0003
05/28/89	22019	FC2	LT 0.0003	0.0004	0.0055	0.0010	0.0007	LT 0.0003	LT 0.0003
05/28/89	22020	BF3	LT 0.0003	0.0007	0.0028	0.0006	0.0005	LT 0.0003	LT 0.0003
05/28/89	22021	BF4	LT 0.0003	LT 0.0004	0.0021	0.0005	LT 0.0003	LT 0.0003	LT 0.0003
05/28/89	22022	BF5	LT 0.0003	LT 0.0004	0.0009	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
05/28/89	22023	BF7	LT 0.0003	LT 0.0004	0.0011	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
05/28/89	22024	RIFS1	LT 0.0003	LT 0.0004	0.0005	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
06/3/89	22027	FC2	0.0011	0.0006	0.0221	0.0023	0.0004	LT 0.0003	LT 0.0003
06/3/89	22028	FC2D	0.0009	0.0006	0.0237	0.0025	0.0005	LT 0.0003	LT 0.0003
06/3/89	22029	BF3	0.0004	0.0006	0.0133	0.0014	LT 0.0003	LT 0.0003	LT 0.0003
06/3/89	22030	BF4	0.0011	0.0005	0.0157	0.0022	LT 0.0003	LT 0.0003	LT 0.0003
06/3/89	22031	BF5	LT 0.0003	0.0005	0.0023	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
06/3/89	22032	BF7	LT 0.0003	0.0004	0.0026	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
06/3/89	22033	RIFS1	LT 0.0003	LT 0.0004	0.0012	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
06/9/89	22035	FC1	0.0003	0.0010	0.0133	0.0015	0.0005	LT 0.0003	LT 0.0003
06/9/89	22036	FC2	0.0013	0.0015	0.0362	0.0045	0.0007	LT 0.0003	LT 0.0003
06/9/89	22037	BF3	0.0006	0.0019	0.0209	0.0021	0.0006	LT 0.0003	LT 0.0003
06/9/89	22038	BF4	0.0006	0.0014	0.0179	0.0022	0.0004	LT 0.0003	LT 0.0003
06/9/89	22039	BF5	LT 0.0003	LT 0.0004	0.0007	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
06/9/89	22040	BF7	LT 0.0003	0.0010	0.0053	0.0006	0.0005	LT 0.0003	LT 0.0003
06/9/89	22041	RIFS1	LT 0.0003	0.0007	0.0033	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
07/9/89	19958	FC2	LT 0.0003	LT 0.0004	0.0022	0.0007	LT 0.0003	LT 0.0003	LT 0.0003
07/9/89	19988	FC2D	LT 0.0003	LT 0.0004	0.0022	0.0006	LT 0.0003	LT 0.0003	LT 0.0003
07/9/89	19989	FC3	LT 0.0003	LT 0.0004	0.0016	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
07/9/89	19990	FC4	LT 0.0003	LT 0.0004	0.0007	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
07/9/89	19991	FC5	LT 0.0003	LT 0.0004	0.0010	0.0005	LT 0.0003	LT 0.0003	LT 0.0003
07/15/89	19994	FC2	0.0011	0.0012	0.0040	0.0021	0.0009	LT 0.0003	0.0010
07/15/89	19995	FC3	0.0006	0.0008	0.0205	0.0008	0.0005	LT 0.0003	LT 0.0003

SUMMARY OF ORGANO CHLORINE PESTICIDE CONCENTRATIONS ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
07/15/89	19996	FC4	0.0006	0.0007	0.0067	0.0010	0.0004	LT 0.0003	LT 0.0003
07/15/89	19997	FC5	0.0005	0.0007	0.0050	0.0008	LT 0.0003	LT 0.0003	LT 0.0003
07/21/89	19999	FC1	LT 0.0003	LT 0.0004	0.0009	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
07/21/89	20000	FC2	LT 0.0003	0.0004	0.0019	0.0005	0.0004	LT 0.0003	LT 0.0003
07/21/89	22501	FC2D	LT 0.0003	LT 0.0004	0.0017	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
07/21/89	22502	FC3	LT 0.0003	0.0004	0.0015	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
07/21/89	22503	FC4	LT 0.0003	LT 0.0004	0.0008	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
07/21/89	22504	FC5	LT 0.0003	LT 0.0004	0.0009	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
07/27/89	22506	FC1	LT 0.0003	LT 0.0004	0.0012	0.0004	0.0004	LT 0.0003	LT 0.0003
07/27/89	22507	FC2	LT 0.0003	0.0005	0.0021	0.0005	0.0004	LT 0.0003	LT 0.0003
07/27/89	22508	FC3	LT 0.0003	0.0004	0.0022	0.0004	0.0004	LT 0.0003	LT 0.0003
07/27/89	22509	FC4	LT 0.0003	LT 0.0004	0.0010	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
07/27/89	22510	FC5	LT 0.0003	LT 0.0004	0.0014	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
08/8/89	22548	FC1	0.0007	0.0004	0.0081	0.0007	LT 0.0003	LT 0.0003	LT 0.0003
08/8/89	22549	FC2	0.0028	0.0010	0.0293	0.0020	0.0006	LT 0.0003	LT 0.0003
08/8/89	22550	FC3	0.0017	0.0007	0.0240	0.0009	LT 0.0003	LT 0.0003	LT 0.0003
08/8/89	22551	FC4	0.0016	LT 0.0004	0.0148	0.0008	0.0003	LT 0.0003	LT 0.0003
08/8/89	22552	FC5	0.0010	0.0003	0.0070	0.0003	LT 0.0003	LT 0.0003	LT 0.0003
08/14/89	22554	FC1	0.0010	0.0008	0.0188	0.0012	LT 0.0003	LT 0.0003	LT 0.0003
08/14/89	22555	FC2	0.0027	0.0012	0.0444	0.0027	LT 0.0003	LT 0.0003	LT 0.0003
08/14/89	22556	FC2D	0.0026	0.0011	0.0424	0.0026	LT 0.0003	LT 0.0003	LT 0.0003
08/14/89	22557	FC3	0.0006	0.0013	0.0172	0.0009	LT 0.0003	LT 0.0003	LT 0.0003
08/14/89	22558	FC4	0.0006	0.0004	0.0160	0.0012	LT 0.0003	LT 0.0003	LT 0.0003
08/14/89	22559	FC5	0.0008	0.0006	0.0159	0.0008	LT 0.0003	LT 0.0003	LT 0.0003
08/20/89	22572	FC1	0.0010	0.0003	0.0046	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
08/20/89	22574	FC3	LT 0.0003	LT 0.0004	0.0016	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
08/20/89	22575	FC4	0.0008	LT 0.0004	0.0057	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
08/20/89	22576	FC5	0.0005	LT 0.0004	0.0041	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
08/26/89	22578	FC1	LT 0.0003	LT 0.0004	0.0011	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
08/26/89	22579	FC2	LT 0.0003	LT 0.0004	0.0027	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
08/26/89	22580	FC2D	LT 0.0003	LT 0.0004	0.0033	0.0004	LT 0.0003	LT 0.0003	LT 0.0003
08/26/89	22581	FC3	LT 0.0003	LT 0.0004	0.0019	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
08/26/89	22582	FC4	LT 0.0003	LT 0.0004	0.0015	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
08/26/89	22583	FC5	LT 0.0003	LT 0.0004	0.0013	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/1/89	22255	FC1	LT 0.0003	LT 0.0004	0.0007	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/1/89	22256	FC2	LT 0.0003	LT 0.0004	0.0012	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/1/89	22257	FC3	LT 0.0003	LT 0.0004	0.0014	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/1/89	22258	FC4	LT 0.0003	LT 0.0004	0.0007	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/1/89	22259	FC5	LT 0.0003	LT 0.0004	0.0005	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/7/89	22241	FC1	LT 0.0003	LT 0.0004	0.0009	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/7/89	22242	FC2	LT 0.0003	LT 0.0004	0.0015	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/7/89	22243	FC2D	LT 0.0003	LT 0.0004	0.0014	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/7/89	22244	FC3	LT 0.0003	LT 0.0004	0.0009	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/7/89	22245	FC4	LT 0.0003	LT 0.0004	0.0006	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/7/89	22246	FC5	LT 0.0003	LT 0.0004	0.0005	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/13/89	22248	FC1	LT 0.0003	LT 0.0004	0.0011	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/13/89	22249	FC2	0.0004	LT 0.0004	0.0044	0.0005	LT 0.0003	LT 0.0003	LT 0.0003
09/13/89	22250	FC3	LT 0.0003	LT 0.0004	0.0027	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/13/89	22272	FC4	LT 0.0003	LT 0.0004	0.0023	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/13/89	22274	FC5	LT 0.0003	LT 0.0004	0.0010	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/19/89	22271	FC1	LT 0.0003	LT 0.0004	0.0020	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

SUMMARY OF ORGANO CHLORINE PESTICIDE CONCENTRATIONS ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
09/19/89	22273	FC2	0.0008	LT 0.0004	0.0055	LT 0.0003	LT 0.0003	LT 0.0003	0.0006
09/19/89	22275	FC2D	0.0009	LT 0.0004	0.0057	LT 0.0003	LT 0.0003	LT 0.0003	0.0006
09/19/89	22277	FC3	LT 0.0003	LT 0.0004	0.0022	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/19/89	22278	FC4	LT 0.0003	LT 0.0004	0.0017	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/19/89	22279	FC5	0.0033	LT 0.0004	0.0019	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/25/89	22281	FC1	LT 0.0003	LT 0.0004	0.0012	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/25/89	22282	FC2	LT 0.0003	LT 0.0004	0.0022	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/25/89	22283	FC3	LT 0.0003	LT 0.0004	0.0012	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/25/89	22284	FC4	LT 0.0003	LT 0.0004	0.0012	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
09/25/89	22285	FC5	LT 0.0003	LT 0.0004	0.0010	LT 0.0003	LT 0.0003	LT 0.0003	LT 0.0003
10/1/89	22288	FC1	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/1/89	22289	FC2	LT 0.0004	LT 0.0004	0.0012	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/1/89	22290	FC2D	LT 0.0004	LT 0.0004	0.0011	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/1/89	22291	FC3	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/1/89	22292	FC4	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/1/89	22293	FC5	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/7/89	22296	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/7/89	22297	FC2	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/7/89	22298	FC3	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/7/89	22299	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/7/89	22300	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/13/89	22302	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/13/89	22303	FC2	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/13/89	22304	FC2D	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/13/89	22305	FC3	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/13/89	22306	FC4	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/13/89	22307	FC5	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/19/89	22309	FC1	LT 0.0004	LT 0.0004	0.0027	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/19/89	22310	FC2	LT 0.0004	0.0003	0.0049	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/19/89	22311	FC3	LT 0.0004	0.0005	0.0026	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/19/89	22313	FC5	LT 0.0004	LT 0.0004	0.0023	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/25/89	22603	FC1	0.0032	LT 0.0004	0.0014	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/25/89	22604	FC2		LT 0.0004	0.0020	0.0003	0.0004	LT 0.0004	LT 0.0004
10/25/89	22605	FC2D		LT 0.0004	0.0018	LT 0.0004	0.0004	LT 0.0004	LT 0.0004
10/25/89	22606	FC3	LT 0.0004	LT 0.0004	0.0008	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/25/89	22607	FC4	0.0032	LT 0.0004	0.0020	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/25/89	22608	FC5	0.0021	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/31/89	22334	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/31/89	22335	FC2	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/31/89	22336	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004
10/31/89	22337	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
10/31/89	22338	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/6/89	22340	FC1	LT 0.0004	LT 0.0004	0.0016	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/6/89	22341	FC2	0.0008	LT 0.0004	0.0044	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
11/6/89	22342	FC2D	LT 0.0004	LT 0.0004	0.0045	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
11/6/89	22351	FC4	LT 0.0004	LT 0.0004	0.0021	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/6/89	22352	FC5	LT 0.0004	LT 0.0004	0.0012	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/12/89	22355	FC1	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/12/89	22356	FC2	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/12/89	22357	FC4	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/12/89	22358	FC5	LT 0.0004	LT 0.0004	0.0008	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004

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SUMMARY OF ORGANO CHLORINE PESTICIDE CONCENTRATIONS ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
11/18/89	22360	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/18/89	22361	FC2	LT 0.0004	LT 0.0004	0.0003	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/18/89	22362	FC2D	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/18/89	22363	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/18/89	22364	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/18/89	22365	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/24/89	22367	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/24/89	22368	FC2	LT 0.0004	LT 0.0004	0.0003	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/24/89	22369	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/24/89	22370	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
11/24/89	22371	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/6/89	22381	FC2	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/6/89	22382	FC3	LT 0.0004	LT 0.0004	0.0008	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/6/89	22383	FC4	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/6/89	22384	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/6/89	22757	FC1	LT 0.0004	LT 0.0004	0.0003	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/12/89	22387	FC2	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/12/89	22388	FC2D	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/12/89	22389	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/12/89	22390	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/12/89	22621	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/18/89	22623	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/18/89	22624	FC2	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/18/89	22625	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/18/89	22626	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/18/89	22627	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/24/89	22391	FC2D	LT 0.0004	LT 0.0004	0.0001	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/24/89	22392	FC3	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/24/89	22393	FC4	LT 0.0004	LT 0.0004	0.0008	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/24/89	22394	FC5	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/24/89	22629	FC1	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004
12/24/89	22630	FC2	LT 0.0004	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/30/89	22396	FC2	LT 0.0004	LT 0.0004	0.0023	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/30/89	22397	FC3	LT 0.0004	LT 0.0004	0.0016	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/30/89	22398	FC4	LT 0.0004	LT 0.0004	0.0017	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/30/89	22399	FC5	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
12/30/89	22410	FC1	LT 0.0004	LT 0.0004	0.0007	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
01/5/90	22411	FC1	LT 0.0004	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/5/90	22412	FC2	LT 0.0004	LT 0.0004	0.0021	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/5/90	22413	FC2D	LT 0.0004	LT 0.0004	0.0022	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/5/90	22414	FC3	LT 0.0004	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/5/90	22415	FC4	LT 0.0004	LT 0.0004	0.0011	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/5/90	22416	FC5	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/11/90	22418	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/11/90	22419	FC2	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/11/90	22420	FC3	LT 0.0004	LT 0.0004	0.0008	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/11/90	22421	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/11/90	22422	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/17/90	22425	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/17/90	22426	FC2	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/17/90	22427	FC2D	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004

SUMMARY OF ORGANO CHLORINE PESTICIDE CONCENTRATIONS

ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
01/17/90	22428	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/17/90	22429	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/17/90	22430	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004
01/23/90	22433	FC2	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/23/90	22434	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/23/90	22435	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/23/90	22436	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/29/90	22438	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/29/90	22439	FC2	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/29/90	22440	FC2D	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/29/90	22461	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/29/90	22462	FC4	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
01/29/90	22463	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/4/90	22465	FC1	LT 0.0004	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/4/90	22466	FC2	LT 0.0004	LT 0.0004	0.0019	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/4/90	22467	FC3	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	0.0005
02/4/90	22468	FC4	LT 0.0004	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/4/90	22469	FC5	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/10/90	22631	FC1	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/10/90	22632	FC2	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/10/90	22633	FC2D	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/10/90	22634	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	0.0008
02/10/90	22636	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/16/90	22638	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/16/90	22639	FC2	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/16/90	22640	FC3	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/16/90	22641	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/16/90	22642	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/22/90	22644	FC1	LT 0.0004	LT 0.0004	0.0020	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/22/90	22645	FC2	LT 0.0004	LT 0.0004	0.0061	0.0009	LT 0.0004	LT 0.0004	LT 0.0004
02/22/90	22646	FC2D	LT 0.0004	LT 0.0004	0.0060	0.0009	LT 0.0004	LT 0.0004	LT 0.0004
02/22/90	22647	FC3	LT 0.0004	0.0003	0.0028	0.0004	LT 0.0004	LT 0.0004	0.0005
02/22/90	22648	FC4	LT 0.0004	LT 0.0004	0.0019	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/22/90	22649	FC5	LT 0.0004	LT 0.0004	0.0023	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/28/90	22652	FC1	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/28/90	22653	FC2	LT 0.0004	LT 0.0004	0.0014	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
02/28/90	22654	FC3	LT 0.0004	LT 0.0004	0.0008	LT 0.0004	LT 0.0004	LT 0.0004	0.0004
02/28/90	22655	FC4	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
02/28/90	22656	FC5	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/6/90	22659	FC1	LT 0.0004	LT 0.0004	0.0012	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/6/90	22660	FC2	LT 0.0004	0.0004	0.0071	0.0011	LT 0.0004	LT 0.0004	LT 0.0004
03/6/90	22661	FC2D	LT 0.0004	0.0004	0.0061	0.0010	LT 0.0004	LT 0.0004	LT 0.0004
03/6/90	22662	FC3	LT 0.0004	LT 0.0004	0.0034	0.0005	LT 0.0004	LT 0.0004	0.0007
03/6/90	22663	FC4	LT 0.0004	0.0003	0.0017	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
03/6/90	22664	FC5	LT 0.0004	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/12/90	22666	FC1	LT 0.0004	LT 0.0004	0.0026	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/12/90	22667	FC2	LT 0.0004	LT 0.0004	0.0095	0.0015	LT 0.0004	LT 0.0004	LT 0.0004
03/12/90	22668	FC3	LT 0.0004	LT 0.0004	0.0021	LT 0.0004	LT 0.0004	LT 0.0004	0.0007
03/12/90	22669	FC4	LT 0.0004	LT 0.0004	0.0029	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
03/12/90	22670	FC5	LT 0.0004	LT 0.0004	0.0023	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/18/90	22475	FC1	LT 0.0004	LT 0.0004	0.0015	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004

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SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
03/18/90	22476	FC2	LT 0.0004	LT 0.0004	0.0006	0.0009	LT 0.0004	LT 0.0004	LT 0.0004
03/18/90	22477	FC2D	LT 0.0004	LT 0.0004	0.0007	0.0009	LT 0.0004	LT 0.0004	LT 0.0004
03/18/90	22478	FC3	LT 0.0004	0.0004	0.0065	0.0006	LT 0.0004	LT 0.0004	0.0005
03/18/90	22479	FC4	LT 0.0004	LT 0.0004	0.0028	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/18/90	22480	FC5	LT 0.0004	LT 0.0004	0.0013	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/24/90	20251	FC3	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/24/90	20252	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/24/90	20253	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/24/90	22485	FC1	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/24/90	22486	FC2	LT 0.0004	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/30/90	20255	FC1	LT 0.0004	LT 0.0004	0.0008	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
03/30/90	20256	FC2	LT 0.0004	LT 0.0004	0.0038	0.0007	LT 0.0004	LT 0.0004	LT 0.0004
03/30/90	20257	FC2D	LT 0.0004	LT 0.0004	0.0041	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
03/30/90	20258	FC3	LT 0.0004	LT 0.0004	0.0046	0.0003	LT 0.0004	LT 0.0004	0.0004
03/30/90	20259	FC4	LT 0.0004	LT 0.0004	0.0038	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
03/30/90	20260	FC5	LT 0.0004	LT 0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/5/90	20273	FC1	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/5/90	20274	FC2	LT 0.0004	LT 0.0004	0.0037	0.0007	LT 0.0004	LT 0.0004	LT 0.0004
04/5/90	20276	FC3	LT 0.0004	LT 0.0004	0.0030	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/5/90	20277	FC4	LT 0.0004	LT 0.0004	0.0014	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/5/90	20278	FC5	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/11/90	20280	FC1	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/11/90	20291	FC2	LT 0.0004	LT 0.0004	0.0036	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
04/11/90	20292	FC2D	LT 0.0004	LT 0.0004	0.0041	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
04/11/90	20293	FC3	LT 0.0004	LT 0.0004	0.0023	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/11/90	20295	FC5	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/18/90	20297	FC1	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/18/90	20298	FC2	LT 0.0004	LT 0.0004	0.0014	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/18/90	20299	FC3	LT 0.0004	LT 0.0004	0.0012	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/18/90	20300	FC4	LT 0.0004	LT 0.0004	0.0009	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/18/90	20301	FC5	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/23/90	20303	FC1	LT 0.0004	LT 0.0004	0.0019	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
04/23/90	20304	FC2	LT 0.0004	0.0004	0.0046	0.0007	LT 0.0004	LT 0.0004	LT 0.0004
04/23/90	20305	FC2D	LT 0.0004	0.0004	0.0050	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
04/23/90	20306	FC3	LT 0.0004	LT 0.0004	0.0020	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/23/90	20307	FC4	LT 0.0004	LT 0.0004	0.0018	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/23/90	20308	FC5	LT 0.0004	LT 0.0004	0.0018	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/29/90	20310	FC1	LT 0.0004	LT 0.0004	0.0003	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/29/90	20311	FC2	LT 0.0004	LT 0.0004	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/29/90	20312	FC3	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/29/90	20313	FC4	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
04/29/90	20314	FC5	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/5/90	20316	FC1	LT 0.0004	LT 0.0004	0.0023	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/5/90	20318	FC2D	LT 0.0004	LT 0.0004	0.0057	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
05/5/90	20319	FC3	LT 0.0004	LT 0.0004	0.0036	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
05/5/90	20320	FC4	LT 0.0004	LT 0.0004	0.0011	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/5/90	20321	FC5	LT 0.0004	LT 0.0004	0.0025	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/11/90	20323	FC1	LT 0.0004	0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/11/90	20339	FC2	LT 0.0004	LT 0.0004	0.0011	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/11/90	20340	FC3	LT 0.0004	0.0005	0.0007	LT 0.0004	LT 0.0004	LT 0.0004	0.0009
05/11/90	20341	FC4	LT 0.0004	0.0004	0.0004	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004

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SUMMARY OF ORGANO CHLORINE PESTICIDE CONCENTRATIONS ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
05/11/90	20342	FC5	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/17/90	20344	FC1	LT 0.0004	LT 0.0004	0.0014	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/17/90	20345	FC2	LT 0.0004	LT 0.0004	0.0026	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
05/17/90	20346	FC2D	LT 0.0004	LT 0.0004	0.0025	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/17/90	20352	FC4	LT 0.0004	LT 0.0004	0.0014	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/17/90	20353	FC5	LT 0.0004	LT 0.0004	0.0011	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/23/90	20355	FC1	LT 0.0004	LT 0.0004	0.0019	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
05/23/90	20357	FC3	LT 0.0004	0.0003	0.0016	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/23/90	20358	FC4	LT 0.0004	0.0003	0.0024	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
05/23/90	20359	FC5	LT 0.0004	LT 0.0004	0.0015	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/29/90	20347	FC1	0.0007	0.0007	0.0130	0.0011	LT 0.0004	LT 0.0004	0.0004
05/29/90	20348	FC4	0.0039	0.0005	0.0330	0.0034	LT 0.0004	LT 0.0004	0.0020
05/29/90	20349	FC5	0.0019	0.0008	0.0180	0.0016	LT 0.0004	LT 0.0004	0.0009
05/29/90	20364	FC3	LT 0.0004	0.0004	0.0053	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
05/29/90	20365	FC2D	0.0069	0.0011	0.0640	0.0064	0.0005	LT 0.0004	0.0038
05/29/90	20366	FC2	0.0068	0.0011	0.0650	0.0063	LT 0.0004	LT 0.0004	0.0041
06/4/90	20415	FC1	0.0005	LT 0.0004	0.0033	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
06/4/90	20416	FC2	LT 0.0004	LT 0.0004	0.0056	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
06/4/90	20417	FC3	LT 0.0004	LT 0.0004	0.0019	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/4/90	20418	FC4	LT 0.0004	LT 0.0004	0.0045	0.0006	LT 0.0004	LT 0.0004	LT 0.0004
06/4/90	20461	FC5	0.0004	LT 0.0004	0.0031	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/10/90	20463	FC1	LT 0.0004	LT 0.0004	0.0020	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/10/90	20464	FC2	0.0005	LT 0.0004	0.0052	0.0007	LT 0.0004	LT 0.0004	0.0004
06/10/90	20465	FC2D	0.0007	LT 0.0004	0.0067	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
06/10/90	20466	FC3	LT 0.0004	LT 0.0004	0.0011	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/10/90	20467	FC4	LT 0.0004	LT 0.0004	0.0019	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/10/90	20468	FC5	LT 0.0004	LT 0.0004	0.0016	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/16/90	20470	FC1	LT 0.0004	LT 0.0004	0.0005	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/16/90	20481	FC2	LT 0.0004	LT 0.0004	0.0024	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
06/16/90	20482	FC3	LT 0.0004	LT 0.0004	0.0015	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/16/90	20483	FC4	LT 0.0004	LT 0.0004	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/16/90	20484	FC5	LT 0.0004	LT 0.0004	0.0006	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/22/90	20471	FC3	LT 0.0004	0.0006	0.0032	0.0039	0.0004	LT 0.0004	LT 0.0004
06/22/90	20472	FC4	LT 0.0004	0.0004	0.0039	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/22/90	20473	FC5	LT 0.0004	LT 0.0004	0.0020	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/22/90	20486	FC1	LT 0.0004	LT 0.0004	0.0028	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
06/22/90	20487	FC2	LT 0.0004	LT 0.0004	0.0045	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
06/22/90	20488	FC2D	LT 0.0004	LT 0.0004	0.0046	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
07/10/90	20523	FC1	LT 0.0004	0.0009	0.0310	0.0018	LT 0.0004	LT 0.0004	0.0005
07/10/90	20524	FC2	0.0058	0.0015	0.0720	0.0052	LT 0.0004	LT 0.0004	
07/10/90	20525	FC3	0.0028	0.0017	0.0270	0.0013	0.0004	LT 0.0004	
07/10/90	20544	FC4	0.0036	0.0012	0.0430	0.0025	LT 0.0004	LT 0.0004	0.0007
07/10/90	20545	FC5	0.0027	0.0009	0.0230	0.0013	LT 0.0004	LT 0.0004	0.0004
07/16/90	25591	FC1	LT 0.0004	0.0005	0.0035	0.0006	LT 0.0004	LT 0.0004	LT 0.0004
07/16/90	25592	FC2	LT 0.0004	0.0006	0.0061	0.0008	LT 0.0004	LT 0.0004	0.0005
07/16/90	25593	FC2D	LT 0.0004	0.0006	0.0052	0.0007	LT 0.0004	LT 0.0004	LT 0.0004
07/16/90	25594	FC3	LT 0.0004	0.0005	0.0030	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
07/16/90	25595	FC4	LT 0.0004	LT 0.0004	0.0030	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
07/16/90	25596	FC5	LT 0.0004	0.0005	0.0034	0.0007	LT 0.0004	LT 0.0004	LT 0.0004
07/22/90	25598	FC1	LT 0.0004	0.0006	0.0086	0.0007	LT 0.0004	LT 0.0004	0.0004
07/22/90	25599	FC2	LT 0.0004	0.0007	0.0180	0.0016	LT 0.0004	LT 0.0004	0.0007

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SUMMARY OF ORGANO CHLORINE PESTICIDE CONCENTRATIONS ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ALDRIN RESULTS	CHLORDANE RESULTS	DIELDRIN RESULTS	ENDRIN RESULTS	ISODRIN RESULTS	PPDDE RESULTS	PPDDT RESULTS
07/22/90	25632	FC3	LT 0.0004	0.0009	0.0110	0.0007	LT 0.0004	LT 0.0004	0.0004
07/22/90	25633	FC4	LT 0.0004	0.0005	0.0170	0.0010	LT 0.0004	LT 0.0004	0.0004
07/22/90	25634	FC5	LT 0.0004	0.0004	0.0064	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
07/28/90	25636	FC1	LT 0.0004	LT 0.0004	0.0014	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
07/28/90	25637	FC2	LT 0.0004	0.0004	0.0032	0.0006	LT 0.0004	LT 0.0004	LT 0.0004
07/28/90	25638	FC2D	LT 0.0004	0.0005	0.0031	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
07/28/90	25639	FC3	LT 0.0004	LT 0.0004	0.0013	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
07/28/90	25640	FC4	LT 0.0004	LT 0.0004	0.0018	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
07/28/90	25641	FC5	LT 0.0004	LT 0.0004	0.0014	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
08/3/90	25643	FC1	LT 0.0004	0.0005	0.0069	0.0007	LT 0.0004	LT 0.0004	LT 0.0004
08/3/90	25644	FC2	0.0004	0.0007	0.0120	0.0011	LT 0.0004	LT 0.0004	0.0005
08/3/90	25645	FC3	LT 0.0004	0.0006	0.0046	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
08/3/90	25646	FC4	LT 0.0004	0.0005	0.0062	0.0007	LT 0.0004	LT 0.0004	LT 0.0004
08/3/90	25647	FC5	LT 0.0004	0.0005	0.0066	0.0007	LT 0.0004	LT 0.0004	LT 0.0004
08/9/90	25652	FC1	LT 0.0004	0.0006	0.0026	0.0006	LT 0.0004	LT 0.0004	LT 0.0004
08/9/90	25653	FC2	LT 0.0004	0.0007	0.0039	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
08/9/90	25655	FC3	LT 0.0004	0.0005	0.0010	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
08/9/90	25656	FC4	LT 0.0004	0.0005	0.0019	LT 0.0004	LT 0.0004	LT 0.0004	LT 0.0004
08/9/90	25657	FC5	LT 0.0004	0.0006	0.0024	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
08/15/90	25671	FC1	0.0008	0.0006	0.0110	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
08/15/90	25672	FC2	0.0018	0.0007	0.0250	0.0018	LT 0.0004	LT 0.0004	0.0005
08/15/90	25673	FC3	0.0035	0.0010	0.0250	0.0016	LT 0.0004	0.0006	0.0014
08/15/90	25674	FC4	0.0011	0.0006	0.0260	0.0016	LT 0.0004	LT 0.0004	LT 0.0004
08/15/90	25675	FC5	LT 0.0004	0.0005	0.0060	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
08/22/90	25670	FC1	0.0079	0.0015	0.0270	0.0022	LT 0.0004	LT 0.0004	0.0006
08/22/90	25677	FC2	0.0300	0.0023	0.0610	0.0049	0.0011	LT 0.0004	0.0014
08/22/90	25678	FC2D	0.0270	LT 0.0004	0.0620	0.0047	LT 0.0004	LT 0.0004	LT 0.0004
08/22/90	25679	FC3	0.0032	0.0023	0.0220	0.0012	0.0007	LT 0.0004	0.0004
08/22/90	25680	FC4	0.0095	0.0014	0.0340	0.0031	0.0004	LT 0.0004	0.0004
08/22/90	25681	FC5	0.0073	0.0018	0.0260	0.0018	0.0004	LT 0.0004	LT 0.0004
08/27/90	25682	FC1	LT 0.0004	LT 0.0004	0.0023	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
08/27/90	25683	FC2	LT 0.0004	LT 0.0004	0.0037	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
08/27/90	25684	FC3	LT 0.0004	LT 0.0004	0.0024	LT 0.0004	LT 0.0004	LT 0.0004	0.0010
08/27/90	25685	FC4	LT 0.0004	LT 0.0004	0.0023	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
08/27/90	25686	FC5	LT 0.0004	LT 0.0004	0.0016	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
09/2/90	20448	FC1	0.0019	0.0012	0.0160	0.0013	LT 0.0004	LT 0.0004	0.0006
09/2/90	20449	FC2	0.0005	0.0016	0.0470	0.0031	LT 0.0004	LT 0.0004	0.0013
09/2/90	20557	FC2D	0.0050	0.0015	0.0420	0.0029	LT 0.0004	LT 0.0004	0.0012
09/2/90	20558	FC3	0.0008	0.0017	0.0140	0.0011	LT 0.0004	LT 0.0004	0.0009
09/2/90	20559	FC4	0.0045	0.0013	0.0310	0.0022	LT 0.0004	LT 0.0004	0.0007
09/2/90	20560	FC5	0.0013	0.0011	0.0170	0.0013	LT 0.0004	LT 0.0004	0.0006
09/8/90	20491	FC4	LT 0.0004	0.0004	0.0017	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
09/8/90	20492	FC5	LT 0.0004	0.0004	0.0016	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
09/8/90	25688	FC1	LT 0.0004	LT 0.0004	0.0019	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
09/8/90	25689	FC2	LT 0.0004	0.0004	0.0026	0.0005	LT 0.0004	LT 0.0004	LT 0.0004
09/8/90	25690	FC3	LT 0.0004	0.0004	0.0015	0.0004	LT 0.0004	LT 0.0004	0.0004
09/14/90	20494	FC1	LT 0.0004	LT 0.0004	0.0009	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
09/14/90	20495	FC2	0.0005	LT 0.0004	0.0030	0.0008	LT 0.0004	LT 0.0004	LT 0.0004
09/14/90	20496	FC2D	0.0004	LT 0.0004	0.0034	0.0008	LT 0.0004	LT 0.0004	0.0004
09/14/90	20497	FC3	LT 0.0004	LT 0.0004	0.0010	0.0004	LT 0.0004	LT 0.0004	0.0004
09/14/90	20498	FC4	LT 0.0004	LT 0.0004	0.0012	0.0004	LT 0.0004	LT 0.0004	LT 0.0004

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09/14/90	25694	FC5	LT 0.0004	0.0004	0.0011	0.0004	LT 0.0004	LT 0.0004	LT 0.0004
09/20/90	25696	FC1	0.0016	0.0005	0.0097	0.0009	LT 0.0004	LT 0.0004	0.0005
09/20/90	25697	FC2	0.0052	0.0006	0.0320	0.0034	LT 0.0004	LT 0.0004	0.0001
09/20/90	25698	FC3	0.0007	0.0006	0.0110	0.0007	LT 0.0004	LT 0.0004	0.0005
09/20/90	25699	FC4	0.0018	0.0004	0.0170	0.0017	LT 0.0004	LT 0.0004	0.0005
09/20/90	25700	FC5	0.0010	0.0005	0.0069	0.0067	LT 0.0004	LT 0.0004	LT 0.0004
09/26/90	25702	FC1	0.0004	0.0006	0.0170	0.0011	LT 0.0004	LT 0.0004	0.0005
09/26/90	25703	FC2	0.0019	0.0008	0.0330	0.0025	LT 0.0004	LT 0.0004	0.0009
09/26/90	25704	FC2D	0.0024	0.0008	0.0350	0.0027	LT 0.0004	LT 0.0004	0.0010
09/26/90	25705	FC3	LT 0.0004	0.0004	0.0037	0.0004	LT 0.0004	LT 0.0004	0.0004
09/26/90	25706	FC4	LT 0.0004	0.0004	0.0200	0.0016	LT 0.0004	LT 0.0004	0.0005
09/26/90	25707	FC5	0.0005	0.0006	0.0140	0.0010	LT 0.0004	LT 0.0004	0.0005

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SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
05/10/89	16105	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/10/89	16106	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/10/89	16107	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/10/89	16109	BF3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/10/89	16110	BF4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/10/89	16111	BF7	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/10/89	16112	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/10/89	16113	BF5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/16/89	16115	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/16/89	22001	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/16/89	22002	BF3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/16/89	22003	BF4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/16/89	22004	BF5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/16/89	22005	BF7	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/16/89	22006	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/22/89	22008	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/22/89	22009	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/22/89	22010	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/22/89	22012	BF3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/22/89	22013	BF4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/22/89	22014	BF5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/22/89	22015	BF7	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/22/89	22016	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/28/89	22017	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/28/89	22019	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/28/89	22020	BF3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/28/89	22021	BF4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/28/89	22022	BF5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/28/89	22023	BF7	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
05/28/89	22024	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/3/89	22027	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/3/89	22028	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/3/89	22029	BF3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/3/89	22030	BF4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/3/89	22031	BF5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/3/89	22032	BF7	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/3/89	22033	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/9/89	22035	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/9/89	22036	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/9/89	22037	BF3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/9/89	22038	BF4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/9/89	22039	BF5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/9/89	22040	BF7	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
06/9/89	22041	RIFS1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/9/89	19958	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/9/89	19988	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/9/89	19989	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/9/89	19990	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/9/89	19991	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/15/89	19994	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
05/10/89	16105	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/10/89	16106	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/10/89	16107	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/10/89	16109	BF3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/10/89	16110	BF4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/10/89	16111	BF7	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/10/89	16112	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/10/89	16113	BF5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/16/89	16115	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/16/89	22001	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/16/89	22002	BF3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/16/89	22003	BF4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/16/89	22004	BF5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/16/89	22005	BF7	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/16/89	22006	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/22/89	22008	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/22/89	22009	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/22/89	22010	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/22/89	22012	BF3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/22/89	22013	BF4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/22/89	22014	BF5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/22/89	22015	BF7	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/22/89	22016	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/28/89	22017	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/28/89	22019	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/28/89	22020	BF3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/28/89	22021	BF4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/28/89	22022	BF5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/28/89	22023	BF7	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
05/28/89	22024	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/3/89	22027	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/3/89	22028	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/3/89	22029	BF3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/3/89	22030	BF4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/3/89	22031	BF5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/3/89	22032	BF7	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/3/89	22033	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/9/89	22035	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/9/89	22036	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/9/89	22037	BF3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/9/89	22038	BF4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/9/89	22039	BF5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/9/89	22040	BF7	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
06/9/89	22041	RIFS1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/9/89	19958	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/9/89	19988	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/9/89	19989	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/9/89	19990	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/9/89	19991	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/15/89	19994	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417

EBASCO SERVICES ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
07/15/89	19995	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/15/89	19996	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/15/89	19997	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/21/89	19999	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
07/21/89	20000	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
07/21/89	22501	FC2D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
07/21/89	22502	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
07/21/89	22503	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
07/21/89	22504	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
07/27/89	22506	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/27/89	22507	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/27/89	22508	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/27/89	22509	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
07/27/89	22510	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/8/89	22548	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/8/89	22549	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/8/89	22550	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/8/89	22551	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/8/89	22552	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/14/89	22554	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/14/89	22555	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/14/89	22556	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/14/89	22557	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/14/89	22558	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/14/89	22559	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/20/89	22572	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/20/89	22574	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/20/89	22575	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/20/89	22576	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/26/89	22578	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/26/89	22579	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/26/89	22580	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/26/89	22581	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/26/89	22582	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
08/26/89	22583	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/1/89	22255	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/1/89	22256	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/1/89	22257	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/1/89	22258	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/1/89	22259	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/7/89	22241	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/7/89	22242	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/7/89	22243	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/7/89	22244	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/7/89	22245	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/7/89	22246	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/13/89	22248	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/13/89	22249	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/13/89	22250	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/13/89	22272	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
07/15/89	19995	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/15/89	19996	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/15/89	19997	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/21/89	19999	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
07/21/89	20000	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
07/21/89	22501	FC2D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
07/21/89	22502	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
07/21/89	22503	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
07/21/89	22504	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
07/27/89	22506	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/27/89	22507	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/27/89	22508	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/27/89	22509	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
07/27/89	22510	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/8/89	22548	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/8/89	22549	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/8/89	22550	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/8/89	22551	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/8/89	22552	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/14/89	22554	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/14/89	22555	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/14/89	22556	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/14/89	22557	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/14/89	22558	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/14/89	22559	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/20/89	22572	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/20/89	22574	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/20/89	22575	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/20/89	22576	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/26/89	22578	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/26/89	22579	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/26/89	22580	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/26/89	22581	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/26/89	22582	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
08/26/89	22583	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/1/89	22255	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/1/89	22256	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/1/89	22257	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/1/89	22258	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/1/89	22259	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/7/89	22241	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/7/89	22242	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/7/89	22243	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/7/89	22244	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/7/89	22245	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/7/89	22246	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/13/89	22248	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/13/89	22249	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/13/89	22250	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/13/89	22272	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417

EBASCO SERVICES ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
09/13/89	22274	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/19/89	22271	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/19/89	22273	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/19/89	22275	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/19/89	22277	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/19/89	22278	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/19/89	22279	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/25/89	22281	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/25/89	22282	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/25/89	22283	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/25/89	22284	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
09/25/89	22285	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/1/89	22288	FC1	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/1/89	22289	FC2	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/1/89	22290	FC2D	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/1/89	22291	FC3	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/1/89	22292	FC4	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/1/89	22293	FC5	LT 0.0799	LT 0.0295	LT 0.1810	LT 0.1010	LT 0.0347	LT 0.0212
10/7/89	22296	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/7/89	22297	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/7/89	22298	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/7/89	22299	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/7/89	22300	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/13/89	22302	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/13/89	22303	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/13/89	22304	FC2D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/13/89	22305	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/13/89	22306	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/13/89	22307	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/19/89	22309	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/19/89	22310	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/19/89	22311	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/19/89	22313	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/25/89	22603	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/25/89	22604	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/25/89	22605	FC2D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/25/89	22606	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/25/89	22607	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/25/89	22608	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/31/89	22334	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/31/89	22335	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/31/89	22336	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/31/89	22337	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
10/31/89	22338	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/6/89	22340	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/6/89	22341	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/6/89	22342	FC2D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/6/89	22351	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/6/89	22352	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/12/89	22355	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
09/13/89	22274	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/19/89	22271	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/19/89	22273	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/19/89	22275	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/19/89	22277	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/19/89	22278	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/19/89	22279	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/25/89	22281	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/25/89	22282	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/25/89	22283	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/25/89	22284	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
09/25/89	22285	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/1/89	22288	FC1	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/1/89	22289	FC2	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/1/89	22290	FC2D	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/1/89	22291	FC3	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/1/89	22292	FC4	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/1/89	22293	FC5	LT 0.0451	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0181	LT 0.0417
10/7/89	22296	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/7/89	22297	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/7/89	22298	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/7/89	22299	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/7/89	22300	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/13/89	22302	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/13/89	22303	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/13/89	22304	FC2D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/13/89	22305	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/13/89	22306	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/13/89	22307	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/19/89	22309	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/19/89	22310	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/19/89	22311	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/19/89	22313	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/25/89	22603	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/25/89	22604	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/25/89	22605	FC2D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/25/89	22606	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/25/89	22607	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/25/89	22608	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/31/89	22334	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/31/89	22335	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/31/89	22336	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/31/89	22337	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
10/31/89	22338	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/6/89	22340	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/6/89	22341	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/6/89	22342	FC2D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/6/89	22351	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/6/89	22352	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/12/89	22355	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420

EBASCO SERVICES ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
11/12/89	22356	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/12/89	22357	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/12/89	22358	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/24/89	22367	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/24/89	22368	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/24/89	22369	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/24/89	22370	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/24/89	22371	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/30/89	22373	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/30/89	27751	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/30/89	27752	FC2D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/30/89	27753	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/30/89	27754	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
11/30/89	27755	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/6/89	22381	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/6/89	22382	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/6/89	22383	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/6/89	22384	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/6/89	27757	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/12/89	22387	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/12/89	22388	FC2D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/12/89	22389	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/12/89	22390	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/12/89	22621	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/18/89	22623	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/18/89	22624	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/18/89	22625	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/18/89	22626	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/18/89	22627	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/24/89	22391	FC2D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/24/89	22392	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/24/89	22393	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/24/89	22394	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/24/89	22629	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
12/24/89	22630	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/5/90	22411	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/5/90	22412	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/5/90	22413	FC2D	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/5/90	22414	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/5/90	22415	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/5/90	22416	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/11/90	22418	FC1	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/11/90	22419	FC2	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/11/90	22420	FC3	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/11/90	22421	FC4	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
01/11/90	22422	FC5	LT 0.0800	LT 0.0300	LT 0.1800	LT 0.1000	LT 0.0350	LT 0.0210
04/11/90	20280	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/11/90	20291	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/11/90	20292	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/11/90	20293	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
11/12/89	22356	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/12/89	22357	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/12/89	22358	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/24/89	22367	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/24/89	22368	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/24/89	22369	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/24/89	22370	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/24/89	22371	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/30/89	22373	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/30/89	27751	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/30/89	27752	FC2D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/30/89	27753	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/30/89	27754	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
11/30/89	27755	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/6/89	22381	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/6/89	22382	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/6/89	22383	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/6/89	22384	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/6/89	27757	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/12/89	22387	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/12/89	22388	FC2D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/12/89	22389	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/12/89	22390	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/12/89	22621	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/18/89	22623	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/18/89	22624	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/18/89	22625	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/18/89	22626	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/18/89	22627	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/24/89	22391	FC2D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/24/89	22392	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/24/89	22393	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/24/89	22394	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/24/89	22629	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
12/24/89	22630	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/5/90	22411	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/5/90	22412	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/5/90	22413	FC2D	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/5/90	22414	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/5/90	22415	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/5/90	22416	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/11/90	22418	FC1	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/11/90	22419	FC2	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/11/90	22420	FC3	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/11/90	22421	FC4	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
01/11/90	22422	FC5	LT 0.0450	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0180	LT 0.0420
04/11/90	20280	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/11/90	20291	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/11/90	20292	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/11/90	20293	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150

EBASCO SERVICES | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

SUMMARY OF SEMI-VOLATILES | ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
04/11/90	20295	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/18/90	20297	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/18/90	20298	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/18/90	20299	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/18/90	20300	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/18/90	20301	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/23/90	20303	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/23/90	20304	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/23/90	20305	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/23/90	20306	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/23/90	20307	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/23/90	20308	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/29/90	20310	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/29/90	20311	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/29/90	20312	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/29/90	20313	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
04/29/90	20314	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/5/90	20316	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/5/90	20317	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/5/90	20318	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/5/90	20319	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/5/90	20320	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/5/90	20321	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/11/90	20323	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/11/90	20339	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/11/90	20340	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/11/90	20341	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/11/90	20342	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/17/90	20344	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/17/90	20345	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/17/90	20346	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/17/90	20352	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/17/90	20353	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/23/90	20355	FC1	LT 0.0140	LT 0.0420	LT 0.0220	0.0180	LT 0.0140	LT 0.0140
05/23/90	20357	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/23/90	20358	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/23/90	20359	FC5	LT 0.0140	LT 0.0420	LT 0.0220	0.0430	LT 0.0140	LT 0.0140
05/29/90	20347	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/29/90	20348	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0220	LT 0.0140
05/29/90	20349	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/29/90	20364	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
05/29/90	20365	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0470	LT 0.0140
05/29/90	20366	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0440	LT 0.0140
07/22/90	25598	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
07/22/90	25599	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0190	LT 0.0140
07/22/90	25632	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
07/22/90	25633	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0180	LT 0.0140
07/22/90	25634	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
07/28/90	25636	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
07/28/90	25637	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
04/11/90	20295	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/18/90	20297	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/18/90	20298	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/18/90	20299	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/18/90	20300	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/18/90	20301	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/23/90	20303	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/23/90	20304	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/23/90	20305	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/23/90	20306	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/23/90	20307	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/23/90	20308	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/29/90	20310	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/29/90	20311	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/29/90	20312	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/29/90	20313	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
04/29/90	20314	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/5/90	20316	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/5/90	20317	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/5/90	20318	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/5/90	20319	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/5/90	20320	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/5/90	20321	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/11/90	20323	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/11/90	20339	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/11/90	20340	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/11/90	20341	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/11/90	20342	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/17/90	20344	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/17/90	20345	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/17/90	20346	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/17/90	20352	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/17/90	20353	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/23/90	20355	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/23/90	20357	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/23/90	20358	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/23/90	20359	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/29/90	20347	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/29/90	20348	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/29/90	20349	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/29/90	20364	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/29/90	20365	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
05/29/90	20366	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/22/90	25598	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/22/90	25599	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/22/90	25632	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/22/90	25633	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/22/90	25634	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/28/90	25636	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/28/90	25637	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
07/28/90	25638	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
07/28/90	25639	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
07/28/90	25640	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
07/28/90	25641	FC5	LT 0.0140	LT 0.0420	LT 0.0220	0.0180	LT 0.0140	LT 0.0140
08/3/90	25643	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/3/90	25644	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/3/90	25645	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/3/90	25646	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/3/90	25647	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/9/90	25652	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/9/90	25653	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/9/90	25655	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/9/90	25656	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/9/90	25657	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/15/90	25671	FC1	LT 0.0140	LT 0.0420	LT 0.0220	0.0250	LT 0.0140	LT 0.0140
08/15/90	25672	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0230	LT 0.0140
08/15/90	25673	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/15/90	25674	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0280	LT 0.0140
08/15/90	25675	FC5	LT 0.0140	LT 0.0420	LT 0.0220	0.0170	LT 0.0140	LT 0.0140
08/22/90	25670	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0210	LT 0.0140
08/22/90	25677	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0610	LT 0.0140
08/22/90	25678	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0590	LT 0.0140
08/22/90	25679	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0180	LT 0.0140
08/22/90	25680	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0270	LT 0.0140
08/22/90	25681	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0220	LT 0.0140
08/27/90	25682	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/27/90	25683	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/27/90	25684	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/27/90	25685	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
08/27/90	25686	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/2/90	20448	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/2/90	20449	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0420	LT 0.0140
09/2/90	20557	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0410	LT 0.0140
09/2/90	20558	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/2/90	20559	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0300	LT 0.0140
09/2/90	20560	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/8/90	20491	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/8/90	20492	FC5	LT 0.0140	LT 0.0420	LT 0.0220	0.0840	LT 0.0140	LT 0.0140
09/8/90	25688	FC1	LT 0.0140	LT 0.0420	LT 0.0220	0.0360	LT 0.0140	LT 0.0140
09/8/90	25689	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/8/90	25690	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/14/90	20494	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/14/90	20495	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/14/90	20496	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/14/90	20497	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/14/90	20498	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/14/90	25694	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/20/90	25696	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/20/90	25697	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0270	LT 0.0140
09/20/90	25698	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
07/28/90	25638	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/28/90	25639	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/28/90	25640	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
07/28/90	25641	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/3/90	25643	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/3/90	25644	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/3/90	25645	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/3/90	25646	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/3/90	25647	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/9/90	25652	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/9/90	25653	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/9/90	25655	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/9/90	25656	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/9/90	25657	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/15/90	25671	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/15/90	25672	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/15/90	25673	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/15/90	25674	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/15/90	25675	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/22/90	25670	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/22/90	25677	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/22/90	25678	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/22/90	25679	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/22/90	25680	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/22/90	25681	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/27/90	25682	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/27/90	25683	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/27/90	25684	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/27/90	25685	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
08/27/90	25686	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/2/90	20448	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/2/90	20449	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/2/90	20557	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/2/90	20558	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/2/90	20559	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/2/90	20560	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/8/90	20491	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/8/90	20492	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/8/90	25688	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/8/90	25689	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/8/90	25690	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/14/90	20494	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/14/90	20495	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/14/90	20496	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/14/90	20497	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/14/90	20498	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/14/90	25694	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/20/90	25696	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/20/90	25697	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/20/90	25698	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150

SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ATRAZINE	CHLORDANE	CHLOROPHENYL METHYLSULFOXIDE	CHLOROPHENYL METHYLSULFONE	DIELDRIN	ENDRIN
09/20/90	25699	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/20/90	25700	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/26/90	25702	FC1	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/26/90	25703	FC2	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0380	LT 0.0140
09/26/90	25704	FC2D	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0370	LT 0.0140
09/26/90	25705	FC3	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140
09/26/90	25706	FC4	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	0.0200	LT 0.0140
09/26/90	25707	FC5	LT 0.0140	LT 0.0420	LT 0.0220	LT 0.0140	LT 0.0140	LT 0.0140

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SUMMARY OF SEMI-VOLATILES ALL UNITS ARE IN UG/M3

SAMPLE DATE	FIELD SAMPLE NUMBER	SITE ID	ISODRIN	MALATHION	DDE	DDT	PARATHION	SUPONA
09/20/90	25699	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/20/90	25700	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/26/90	25702	FC1	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/26/90	25703	FC2	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/26/90	25704	FC2D	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/26/90	25705	FC3	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/26/90	25706	FC4	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150
09/26/90	25707	FC5	LT 0.0260	LT 0.0180	LT 0.0520	LT 0.0160		LT 0.0150

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ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
05/10/89	20170 20171	BF3	1.1600 a	LT 0.0295	LT 0.0243	0.0320 b	0.2420	LT 0.0417	1.6500	0.4230 a	0.3100 b	0.2070 a	0.0425
05/10/89	20173 20174	BF4	1.5200 a	LT 0.0295	LT 0.0243	0.0613 b	LT 0.0278	LT 0.0417	1.9600 a	0.5080 a	0.4640 b	0.3280 a	LT 0.0330
05/10/89	20176 20177	BF5	0.9860 a	LT 0.0295	LT 0.0243	0.0240 b	0.7750	LT 0.0417	1.6000	0.3920 a	0.3200 b	0.1660 a	0.0817
05/10/89	20179 20180	BF7	2.0000 a	LT 0.0295	LT 0.0243	LT 0.0208	0.6670	LT 0.0417	2.1000 a	0.4950 a	0.7420 a	0.1620 a	0.0673
05/10/89	20158 20159	FC1	1.0800 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4890	LT 0.0417	1.5300 a	0.3090 a	0.4200 b	0.2520 a	0.0723
05/10/89	20161 20162	FC2	1.4500 a	LT 0.0295	LT 0.0243	0.0426 b	0.7090	LT 0.0417	1.8000 a	0.4840 a	0.6230 b	0.5290 a	0.0699
05/10/89	20164 20165	FC20	1.7600 a	LT 0.0295	LT 0.0243	0.1030	1.0700	LT 0.0417	2.5500	0.6530	0.5310 a	0.6410 a	0.1070
05/10/89	20182 20183	RIFS1	2.1600 a	LT 0.0295	LT 0.0243	LT 0.0208	1.1200	LT 0.0417	2.5700 a	0.5490 a	0.9210 a	0.1980 a	0.0841
05/16/89	23008 23009	BF3	1.7300 a	LT 0.0295	LT 0.0243	LT 0.0208	1.1300	LT 0.0417	1.1300	0.4300 a	1.6500 a	0.0804 a	LT 0.0330
05/16/89	23011 23012	BF4	2.1600 a	LT 0.0295	LT 0.0243	LT 0.0208	1.3000	LT 0.0417	1.4900	0.6550 a	2.6100	0.1050 a	LT 0.0330
05/16/89	23017 23018	BF7	1.8500 a	LT 0.0000	LT 0.0000	LT 0.0000	0.7830	LT 0.0000	0.8690	0.4200 a	0.7030 a	0.0790 a	LT 0.0000
05/16/89	23002 23003	FC1	1.7900 a	LT 0.0295	LT 0.0243	0.0250 b	0.5520	LT 0.0417	1.2200	0.4670 a	1.1700 a	0.0917 a	LT 0.0330
05/16/89	23020 23021	RIFS1	1.5700 a	LT 0.0000	LT 0.0000	0.0230 b	1.0600	LT 0.0000	0.9970	0.4300 a	0.7820 a	0.0810 a	LT 0.0000
05/22/89	23038 23039	BF3	0.3640 a	LT 0.0295	LT 0.0243	LT 0.0208	0.7910	LT 0.0417	1.6000 a	0.2610 a	0.3050 b	LT 0.0208	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

ALL UNITS ARE IN UG/M3 SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
05/10/89	20170	20171	BF3	LT 0.0382	LT 0.0451	LT 0.0469	0.1940	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.7790	0.0818	0.6820
05/10/89	20173	20174	BF4	LT 0.0382	LT 0.0451	LT 0.0469	LT 0.0295	3.6400	LT 0.0174	LT 0.1020	LT 0.0399	0.5630	0.1140	LT 0.1410
05/10/89	20176	20177	BF5	0.0891	LT 0.0451	LT 0.0469	0.5630	2.7800	LT 0.0174	LT 0.1020	LT 0.0399	1.1600	0.0968	2.3200
05/10/89	20179	20180	BF7	LT 0.0382	LT 0.0451	LT 0.0469	0.5000	2.9300	LT 0.0174	LT 0.1020	LT 0.0399	1.0300	0.0610	1.9700
05/10/89	20158	20159	FC1	0.2800 b	LT 0.0451	LT 0.0469	0.4560	GT 0.3470	0.0490 b	LT 0.1020	LT 0.0399	1.0400	1.5200 a	1.5300
05/10/89	20161	20162	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.5510	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.8650	0.1070	1.8300
05/10/89	20164	20165	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.8000	4.4000	LT 0.0174	LT 0.1020	LT 0.0399	1.1300	0.1450	3.2000
05/10/89	20182	20183	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.8700	3.4100	LT 0.0174	LT 0.1020	LT 0.0399	1.2700	0.0996	3.1900
05/16/89	23008	23009	BF3	LT 0.0382	LT 0.0451	LT 0.0469	0.8480	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	1.6300	0.0809	2.7600
05/16/89	23011	23012	BF4	LT 0.0382	LT 0.0451	LT 0.0469	1.0100	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	1.8800	0.1040	3.3000
05/16/89	23017	23018	BF7	LT 0.0000	LT 0.0000	LT 0.0000	0.6050	GT 0.0004	LT 0.0000	LT 0.0001	LT 0.0000	1.6000	0.0650	1.9200
05/16/89	23002	23003	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.4830	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	1.6900	0.4140	1.7600
05/16/89	23020	23021	RIFS1	LT 0.0000	LT 0.0000	LT 0.0000	0.7850	GT 0.0004	LT 0.0000	LT 0.0001	LT 0.0000	1.4000	0.0740	2.3200
05/22/89	23038	23039	BF3	LT 0.0382	LT 0.0451	LT 0.0469	0.5760	2.0500	LT 0.0174	LT 0.1020	LT 0.0399	0.5040	LT 0.0330	2.0900

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
05/22/89	23047	23048	BF7	1.0600 a	LT 0.0295	LT 0.0243	LT 0.0208	0.6230	LT 0.0417	1.2600 a	0.2990 a	0.4870 b	0.0329 b	LT 0.0330
05/22/89	23026	23027	FC1	0.8730 a	LT 0.0295	LT 0.0243	LT 0.0208	0.7720	LT 0.0417	1.3200 a	0.2630 a	0.2180 b	0.0217 b	LT 0.0330
05/22/89	23032	23033	FC2D	1.2400 a	LT 0.0295	LT 0.0243	LT 0.0208	0.2740	LT 0.0417	1.1000 a	0.3810 a	0.1910 b	0.0449 b	LT 0.0330
05/22/89	23050	23051	RIFS1	0.9970 a	LT 0.0295	LT 0.0243	LT 0.0208	0.6670	LT 0.0417	1.3900 a	0.2220 a	0.4380 a	0.3030	LT 0.0330
05/26/89	23059	23060	BF3	0.5380 a	LT 0.0295	LT 0.0243	LT 0.0208	0.8300	LT 0.0417	0.9110 a	0.2310 a	0.4340 a	LT 0.0208	LT 0.0330
05/26/89	23062	23063	BF4	0.6680 a	LT 0.0295	LT 0.0243	LT 0.0208	1.0300	LT 0.0417	1.0700 a	0.2900 a	0.4720 a	0.0264 b	LT 0.0330
05/26/89	23065	23066	BF5	0.6060 a	LT 0.0295	LT 0.0243	LT 0.0208	1.1900	LT 0.0417	0.8740 a	0.2300 a	0.4000 a	LT 0.0208	LT 0.0330
05/26/89	23053	23054	FC1	0.7290 a	LT 0.0295	LT 0.0243	LT 0.0208	0.9410	LT 0.0417	1.2700 a	0.2590 a	0.7670 b	0.0467 b	LT 0.0330
05/26/89	23056	23057	FC2	0.5660 a	LT 0.0295	LT 0.0243	LT 0.0208	0.6990	GT 0.3470	0.2580 a	0.2650 a	0.1520 a	LT 0.0208	LT 0.0330
05/26/89	23071	23072	RIFS1	0.7230 a	LT 0.0295	LT 0.0243	LT 0.0208	1.2200	LT 0.0417	1.3100 a	0.2480 a	0.6840 a	0.0388 b	LT 0.0330
06/3/89	23086	23087	BF3	0.7850 a	LT 0.0295	LT 0.0243	0.0719 a	0.1380	LT 0.0417	0.5200 a	0.6390 a	0.2260 a	0.1260 a	LT 0.0330
06/3/89	23092	23093	BF5	0.9480 a	LT 0.0295	LT 0.0243	0.0913 a	0.0861	LT 0.0417	0.6140 a	0.6070 a	0.1970 b	0.1590 b	LT 0.0330
06/3/89	23095	23096	BF7	0.8350 a	LT 0.0295	LT 0.0243	0.0439 b	0.1330	LT 0.0417	0.5940 a	0.4520 a	0.2310 a	0.1180 a	LT 0.0330
06/3/89	23060	23061	FC2	0.7310 a	LT 0.0295	LT 0.0243	0.0404 b	0.1030	LT 0.0417	0.5550 a	0.5020 a	0.2520 a	0.1160 a	LT 0.0330

a - t/c weight >.25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

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ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
05/22/89	23047 23048	BF7	LT 0.0382	LT 0.0451	LT 0.0469	0.4030	2.4500	0.0941	LT 0.1020	LT 0.0399	0.4760	LT 0.0330	1.7600
05/22/89	23026 23027	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.5610	2.0400	LT 0.0174	LT 0.1020	LT 0.0399	0.6320	0.6600 a	2.0000
05/22/89	23032 23033	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.2340	2.0700	LT 0.0174	LT 0.1020	LT 0.0399	0.5170	LT 0.0330	0.8790
05/22/89	23050 23051	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.5190	2.3700	LT 0.0174	LT 0.1020	LT 0.0399	0.7040	LT 0.0330	1.9600
05/28/89	23059 23060	BF3	LT 0.0382	LT 0.0451	LT 0.0469	0.5880	2.7500	LT 0.0174	LT 0.1020	LT 0.0399	0.4500	LT 0.0330	2.0100
05/28/89	23062 23063	BF4	LT 0.0382	LT 0.0451	LT 0.0469	0.7120	3.3100	LT 0.0174	LT 0.1020	LT 0.0399	0.5340	LT 0.0330	2.5300
05/28/89	23065 23066	BF5	LT 0.0382	LT 0.0451	LT 0.0469	0.7460	3.2500	LT 0.0174	LT 0.1020	LT 0.0399	0.5220	LT 0.0330	2.6100
05/28/89	23053 23054	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.6620	3.2400	LT 0.0174	LT 0.1020	LT 0.0399	0.5230	0.1320 b	2.2600
05/28/89	23056 23057	FC2	LT 0.0382	LT 0.0451	LT 0.0469	3.9900	2.5200	LT 0.0174	LT 0.1020	LT 0.0399	0.4200	0.0601 b	1.8500
05/28/89	23071 23072	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.7980	3.5400	LT 0.0174	LT 0.1020	LT 0.0399	0.6460	LT 0.0330	2.6600
06/3/89	23086 23087	BF3	LT 0.0382	LT 0.0451	LT 0.0469	0.1030	0.7890	LT 0.0174	LT 0.1020	LT 0.0399	0.2390	LT 0.0330	0.3180
06/3/89	23092 23093	BF5	LT 0.0382	LT 0.0451	LT 0.0469	0.0634	0.4400	LT 0.0174	LT 0.1020	LT 0.0399	0.1770	LT 0.0330	0.1830
06/3/89	23095 23096	BF7	LT 0.0382	LT 0.0451	LT 0.0469	0.0961	0.8210	LT 0.0174	LT 0.1020	LT 0.0399	0.1980	LT 0.0330	0.3060
06/3/89	23080 23081	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.0789	0.6430	LT 0.0174	LT 0.1020	LT 0.0399	0.1720	LT 0.0330	0.2360

a - t/c weight).25t weight
b - Detected on t/c only
[illegible] Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
06/3/89	23063	23064	FC20	0.9790 a	LT 0.0295	LT 0.0243	0.0576	0.1210	LT 0.0417	1.0600 a	0.6910 a	0.3440 a	0.1890 a	LT 0.0330
06/3/89	23098	23099	RIFS1	1.0000 a	LT 0.0295	LT 0.0243	0.0993 a	0.1510	LT 0.0417	0.6520 a	0.5290 a	0.1690 b	0.1430 a	LT 0.0330
06/9/89	23110	23111	BF3	0.3180 a	LT 0.0295	LT 0.0243	0.0412 b	0.4010	LT 0.0417	0.8460 a	0.6960 a	0.1550 b	0.1280 a	LT 0.0330
06/9/89	23113	23114	BF4	0.8750 a	LT 0.0295	LT 0.0243	LT 0.0208	0.3940	LT 0.0417	1.0400 a	0.6930 a	0.1570 b	0.1180 a	LT 0.0330
06/9/89	23116	23117	BF5	0.8510 a	LT 0.0295	LT 0.0243	LT 0.0208	0.3440	LT 0.0417	0.9220 a	0.7710 a	0.1670 b	0.1260 a	LT 0.0330
06/9/89	23119	23120	BF7	1.0300 a	LT 0.0295	LT 0.0243	LT 0.0208	0.3340	LT 0.0417	1.0300 a	0.7300 a	0.2110 b	0.1360 a	LT 0.0330
06/9/89	23107	23108	FC2	0.7500 a	LT 0.0295	LT 0.0243	LT 0.0208	0.3660	LT 0.0417	0.8910 a	0.6960 a	0.1210 b	0.1380 a	LT 0.0330
06/9/89	23122	23123	RIFS1	0.7580 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5090	LT 0.0417	1.0200 a	0.4610 a	0.1850 b	0.1240 a	LT 0.0330
06/15/89	23134	23135	BF3	1.0700 a	LT 0.0295	LT 0.0243	0.0445 b	0.5020	LT 0.0417	0.9390 a	0.4180 a	0.4220 a	0.0793 b	0.0505
06/15/89	23137	23138	BF4	0.9620 a	LT 0.0295	LT 0.0243	0.0423 b	0.4310	LT 0.0417	0.9620 a	0.3810 a	0.3730 a	0.0873 a	0.0485
06/15/89	23143	23144	BF5	0.8830 a	LT 0.0295	LT 0.0243	0.0414 b	0.4400	LT 0.0417	0.7980 a	0.4030 a	0.3000 b	0.0414 b	0.0516
06/15/89	23146	23147	BF7	1.0600 a	LT 0.0295	LT 0.0243	LT 0.0208	0.6110	LT 0.0417	0.9320 a	0.3110 a	0.3410 b	0.0662 b	0.0650
06/15/89	23128	23129	FC2	0.9680 a	LT 0.0295	LT 0.0243	0.0441 b	0.5020	LT 0.0417	0.9810 a	0.3910 a	0.3340 b	0.0801 a	0.0505
06/15/89	23131	23132	FC20	1.5300	LT 0.0295	LT 0.0243	LT 0.0208	0.3840	LT 0.0417	1.6900 a	0.6860	0.6480 a	0.2680	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropene	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
06/3/89	23083 23084	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.0862	0.7130	LT 0.0174	LT 0.1020	LT 0.0399	0.1620	LT 0.0330	LT 0.1410
06/3/89	23098 23099	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.1150	0.8960	LT 0.0174	LT 0.1020	LT 0.0399	0.1910	LT 0.0330	0.3880
06/9/89	23110 23111	BF3	LT 0.0382	LT 0.0451	LT 0.0469	0.2910	1.4200	LT 0.0174	LT 0.1020	LT 0.0399	0.3370	LT 0.0330	1.0900
06/9/89	23113 23114	BF4	LT 0.0382	LT 0.0451	LT 0.0469	0.3000	1.4300	LT 0.0174	LT 0.1020	LT 0.0399	0.3360	LT 0.0330	1.1100
06/9/89	23116 23117	BF5	LT 0.0382	LT 0.0451	LT 0.0469	0.2530	1.3300	LT 0.0174	LT 0.1020	LT 0.0399	0.3000	LT 0.0330	0.9630
06/9/89	23119 23120	BF7	LT 0.0382	LT 0.0451	LT 0.0469	0.2600	1.5700	0.0282 b	LT 0.1020	LT 0.0399	0.3880	LT 0.0330	0.9610
06/9/89	23107 23108	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.2730	1.3700	LT 0.0174	LT 0.1020	LT 0.0399	0.3460	LT 0.0330	0.9930
06/9/89	23122 23123	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.3500	1.6400	LT 0.0174	LT 0.1020	LT 0.0399	0.3670	LT 0.0330	1.3800
06/15/89	23134 23135	BF3	LT 0.0382	LT 0.0451	LT 0.0469	0.4350	1.5400	LT 0.0174	LT 0.1020	LT 0.0399	0.4720	LT 0.0330	1.2400
06/15/89	23137 23138	BF4	LT 0.0382	LT 0.0451	LT 0.0469	0.4120	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.4050	LT 0.0330	1.2000
06/15/89	23143 23144	BF5	LT 0.0382	LT 0.0451	LT 0.0469	0.3450	1.5000	LT 0.0174	LT 0.1020	LT 0.0399	0.4250	LT 0.0330	1.1400
06/15/89	23146 23147	BF7	0.0476 b	LT 0.0451	LT 0.0469	0.4820	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.4180	LT 0.0330	1.4500
06/15/89	23128 23129	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.3940	1.5400	LT 0.0174	LT 0.1020	LT 0.0399	0.4870	LT 0.0330	1.2500
06/15/89	23131 23132	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.3260	2.6000	LT 0.0174	LT 0.1020	LT 0.0399	0.4260	LT 0.0330	1.0000

a - t/c weight).25t weight
b - Detected on t/c only
[redacted] Value[redacted]e CRL.[redacted]imate [redacted]e

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/MS

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
06/15/89	23140 23141	FC5	1.0300 a	LT 0.0295	LT 0.0243	0.0427 b	0.4510	LT 0.0417	0.8910 a	0.4200 a	0.3780 b	0.1530 a	0.0455
06/15/89	23149 23150	RIFS1	1.1500 a	LT 0.0295	LT 0.0243	0.0493 b	0.4810	LT 0.0417	0.9360 a	0.3950 a	0.4130 a	0.1150 a	0.0374
06/21/89	23161 23162	BF3	1.0200 a	LT 0.0295	LT 0.0243	0.0457	0.1030	LT 0.0417	0.6080 a	0.3910 a	0.2100 b	0.1570 a	LT 0.0330
06/21/89	23170 23171	BF5	1.0300 a	LT 0.0295	LT 0.0243	0.0470	0.0565	LT 0.0417	0.5750 a	0.3760 a	0.3550 a	0.1380 a	LT 0.0330
06/21/89	23155 23156	FC1	0.5940 a	LT 0.0295	LT 0.0243	0.0368	0.4690	LT 0.0417	0.5970 a	0.3460 a	0.2040 b	0.1160 a	LT 0.0330
06/21/89	23158 23159	FC2	0.9510 a	LT 0.0295	LT 0.0243	0.0586 a	0.1300	LT 0.0417	0.6950 a	0.4080 a	0.3370 a	0.2480 a	LT 0.0330
06/21/89	23164 23165	FC4	0.3260 a	LT 0.0295	LT 0.0243	0.0621 a	0.4550	LT 0.0417	0.6560 a	0.4250 a	0.2520 b	0.1100 a	LT 0.0330
06/21/89	23167 23168	FC5	1.0700 a	LT 0.0295	LT 0.0243	0.0362	0.1150	LT 0.0417	0.7220 a	0.4240 a	0.2380 b	0.3080 a	LT 0.0330
06/21/89	23176 23177	RIFS1	0.9280 a	LT 0.0295	LT 0.0243	0.0621 a	0.3380	LT 0.0417	0.7920 a	0.3920 a	0.1360 b	0.0808 a	LT 0.0330
06/27/89	23200 23201	BF5	1.2900 a	LT 0.0295	LT 0.0243	LT 0.0208	0.8030	LT 0.0417	2.0400 a	0.4010 a	0.4420 b	0.0787 b	LT 0.0330
06/27/89	23203 23204	BF7	0.9450 a	LT 0.0295	LT 0.0243	LT 0.0208	0.2710	LT 0.0417	1.2700 a	0.2330 a	0.4330 b	LT 0.0208	LT 0.0330
06/27/89	23182 23183	FC1	0.9280 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4850	LT 0.0417	1.3900 a	0.2330 a	0.0578 b	0.0653 b	LT 0.0330
06/27/89	23185 23186	FC2	0.9020 a	LT 0.0295	LT 0.0243	0.0425 b	0.6390	LT 0.0417	0.9600 a	0.2260 a	0.3400 b	0.0970 b	LT 0.0330
06/27/89	23188 23189	FC2D	1.6400 a	LT 0.0295	LT 0.0243	LT 0.0208	0.7550	LT 0.0417	1.5100 a	0.5000 a	LT 0.0278	0.0942 b	LT 0.0330

a - t/c weight >.25t weight
b - Detected on t/c only
GT - Value is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
06/15/89	23140	23161	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.3820	1.4900	LT 0.0174	LT 0.1020	LT 0.0399	0.4170	0.4500 a	1.1800
06/15/89	23149	23150	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.3560	1.5600	LT 0.0174	LT 0.1020	LT 0.0399	0.3740	LT 0.0330	1.1900
06/21/89	23161	23162	BF3	LT 0.0382	LT 0.0451	LT 0.0469	0.0751	0.5580	LT 0.0174	LT 0.1020	LT 0.0399	0.2640	LT 0.0330	0.2520
06/21/89	23170	23171	BF5	LT 0.0382	LT 0.0451	LT 0.0469	0.0442	0.4240	LT 0.0174	LT 0.1020	LT 0.0399	0.1960	LT 0.0330	0.1370
06/21/89	23155	23156	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.3050	1.6500	LT 0.0174	LT 0.1020	LT 0.0399	0.3970	0.1660	1.2300
06/21/89	23158	23159	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.0926	1.0400	LT 0.0174	LT 0.1020	LT 0.0399	0.3530	LT 0.0330	0.3210
06/21/89	23164	23165	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.3160	1.3300	LT 0.0174	LT 0.1020	LT 0.0399	0.4830	LT 0.0330	1.2200
06/21/89	23167	23168	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.0847	0.6510	LT 0.0174	LT 0.1020	LT 0.0399	0.4410	0.8920 a	0.2930
06/21/89	23176	23177	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.1990	1.2800	LT 0.0174	LT 0.1020	LT 0.0399	0.4060	0.0897	0.8540
06/27/89	23200	23201	BF5	LT 0.0382	LT 0.0451	LT 0.0469	0.5220	1.9700	LT 0.0174	LT 0.1020	LT 0.0399	1.1200	0.1890 b	1.7700
06/27/89	23203	23204	BF7	LT 0.0382	LT 0.0451	LT 0.0469	0.1890	2.1100	LT 0.0174	LT 0.1020	LT 0.0399	0.6910	LT 0.0330	0.6510
06/27/89	23182	23183	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.3300	1.7900	LT 0.0174	LT 0.1020	LT 0.0399	1.1900	0.3340 a	1.3400
06/27/89	23185	23186	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.4140	1.8000	LT 0.0174	LT 0.1020	LT 0.0399	1.3500	0.1210 b	1.5400
06/27/89	23188	23189	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.4570	2.5000	LT 0.0174	LT 0.1020	LT 0.0399	1.3300	LT 0.0330	1.8300

a - t/c weight).25% weight
b - Detected on t/c only
[redacted] Value[redacted]e CRL;[redacted]mate [redacted]e

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
06/27/89	23191	23192	FC3	1.0200 a	LT 0.0295	LT 0.0243	LT 0.0208	0.6360	LT 0.0417	1.0300 a	0.2390 a	0.4560 b	0.0262 b	LT 0.0330
06/27/89	23194	23195	FC4	0.9210 a	LT 0.0295	LT 0.0243	0.0401 b	0.7090	LT 0.0417	1.0000 a	0.2130 a	0.4610 b	0.0241 b	LT 0.0330
06/27/89	23197	23198	FC5	0.3920 a	LT 0.0295	LT 0.0243	LT 0.0208	0.7270	LT 0.0417	0.8520 a	0.2090 a	0.4470 b	0.0636 b	LT 0.0330
06/27/89	23206	23207	RIFS1	1.0600 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4940	LT 0.0417	1.9000 a	0.2600 a	0.5360 b	0.0325 b	LT 0.0330
07/3/89	23213	23214	FC2	1.0700 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5900	LT 0.0417	1.2900 a	0.4360 a	0.8230 a	0.1600 b	LT 0.0330
07/3/89	23217	23218	FC4	0.5250 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4760	LT 0.0417	0.5620 a	0.1440 a	0.5940 a	0.0604 b	LT 0.0330
07/3/89	23219	23220	FC5	0.5630 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5650	LT 0.0417	0.5000 a	0.1770 a	0.5990 a	0.1310 b	LT 0.0330
07/9/89	23224	23225	FC2	0.3930 a	LT 0.0295	LT 0.0243	0.0302 b	0.4200	LT 0.0417	0.4530 a	0.1370 a	0.4260 a	0.6870 b	LT 0.0330
07/9/89	23227	23228	FC20	0.3940 a	LT 0.0295	LT 0.0243	LT 0.0208	0.3550	LT 0.0417	0.3830 b	0.0917 b	0.3580 b	0.7580 b	LT 0.0330
07/9/89	23230	23231	FC3	0.4190 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5200	LT 0.0417	0.3860 a	0.1490 a	0.3730 a	0.0844 b	LT 0.0330
07/9/89	23233	23234	FC4	0.4140 a	LT 0.0295	LT 0.0243	0.0231 b	0.4290	LT 0.0417	0.3120 a	0.1490 a	0.3820 b	0.0846 b	LT 0.0330
07/9/89	23236	23237	FC5	0.4030 a	LT 0.0295	LT 0.0243	LT 0.0208	0.3900	LT 0.0417	0.4970 a	0.1450 a	0.3860 a	0.1990 b	LT 0.0330
07/15/89	23241	23242	FC1	1.2100 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4320	LT 0.0417	1.1500 a	0.6120 a	2.0500 a	0.1630 b	LT 0.0330
07/15/89	23243	23244	FC2	1.3400 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5300	LT 0.0417	1.3800 a	0.6830 a	1.3400 a	0.6280 a	LT 0.0330

a - t/c weight).25t weight
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GT - Value is Above CRL; No Estimate Available

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropene	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
06/27/89	23191	23192	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.3890	1.6600	LT 0.0174	LT 0.1020	LT 0.0399	1.2700	0.0890 b	GT 0.6940
06/27/89	23194	23195	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.4610	1.7000	LT 0.0174	LT 0.1020	LT 0.0399	1.2400	0.0936 b	1.6000
06/27/89	23197	23198	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.4730	1.7500	LT 0.0174	LT 0.1020	LT 0.0399	1.2400	0.8860 a	1.6000
06/27/89	23206	23207	RIFS1	LT 0.0382	LT 0.0451	LT 0.0469	0.3440	3.3500	LT 0.0174	LT 0.1020	LT 0.0399	0.9510	LT 0.0330	1.2900
07/3/89	23213	23214	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.4010	2.9100	LT 0.0174	LT 0.1020	LT 0.0399	1.3200	LT 0.0330	1.3800
07/3/89	23217	23218	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.3140	2.4900	LT 0.0174	LT 0.1020	LT 0.0399	0.7330	0.0714 b	1.2800
07/3/89	23219	23220	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.3890	2.6100	LT 0.0174	LT 0.1020	LT 0.0399	1.0200	0.9260 a	1.4800
07/9/89	23224	23225	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.3120	2.4400	LT 0.0174	LT 0.1020	LT 0.0399	0.5420	LT 0.0330	1.3700
07/9/89	23227	23228	FC2D	LT 0.0382	LT 0.0451	LT 0.0469	0.2190	1.6600	LT 0.0174	LT 0.1020	LT 0.0399	0.3770	LT 0.0330	1.0200
07/9/89	23230	23231	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.3580	2.5700	LT 0.0174	LT 0.1020	LT 0.0399	0.4760	LT 0.0330	1.5600
07/9/89	23233	23234	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.2680	1.8900	LT 0.0174	LT 0.1020	LT 0.0399	0.3350	LT 0.0330	1.2100
07/9/89	23236	23237	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.2510	1.6700	LT 0.0174	LT 0.1020	LT 0.0399	0.4170	0.8740 a	1.0600
07/15/89	23241	23242	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.3040	1.6500	LT 0.0174	LT 0.1020	LT 0.0399	0.4600	0.2520 a	1.1200
07/15/89	23243	23244	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.4240	1.8700	LT 0.0174	LT 0.1020	LT 0.0399	0.4910	LT 0.0330	1.3800

a - t/c weight).25t weight
b - Detected on t/c only
[redacted] Value [redacted] CRL; [redacted]mate [redacted]

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
07/15/89	23247 23248	FC3	1.2600 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5760	LT 0.0417	1.1500 a	0.6810 a	4.2600 a	0.1110 b	LT 0.0330
07/15/89	23249 23250	FC4	1.5300 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5320	LT 0.0417	1.4900 a	0.5900 a	3.5400 a	0.1500 b	LT 0.0330
07/15/89	23251 23252	FC5	1.3600 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5730	LT 0.0417	1.1500 a	0.5620 a	6.7700 a	0.2370 b	LT 0.0330
07/21/89	23254 23255	FC1	1.0400 a	LT 0.0295	LT 0.0243	LT 0.0208	0.1890	LT 0.0417	1.1400 a	0.3480 a	0.3540 b	0.0797 b	LT 0.0330
07/21/89	23257 23256	FC2	0.7470 a	LT 0.0295	LT 0.0243	LT 0.0208	0.2220	LT 0.0417	0.7220 a	0.2430 a	0.1730 b	0.1000 b	LT 0.0330
07/21/89	23260 23261	FC20	0.7630 a	LT 0.0295	LT 0.0243	LT 0.0208	0.2730	LT 0.0417	0.6770 a	0.2660 a	0.1980 b	0.1170 a	LT 0.0330
07/21/89	23263 23264	FC3	0.8770 a	LT 0.0295	LT 0.0243	LT 0.0208	0.1760	LT 0.0417	0.9360 a	0.3190 a	0.2590 a	0.0386 b	LT 0.03[illegible]
07/21/89	23266 23267	FC4	0.6830 a	LT 0.0295	LT 0.0243	LT 0.0208	0.0323	LT 0.0417	0.7710 a	0.2670 a	0.8480	0.0301 b	LT 0.0330
07/21/89	23269 23270	FC5	0.7140 a	LT 0.0295	LT 0.0243	0.0258 b	0.1880	LT 0.0417	0.7160 a	0.2740 a	2.8600	0.0399 b	LT 0.0330
07/27/89	23274 23275	FC1	1.2300 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5520	LT 0.0417	0.6250 a	0.2010 a	0.4140 b	0.1850 b	LT 0.0330
07/27/89	23276 23277	FC2	1.3500 a	LT 0.0295	LT 0.0243	0.0358 b	0.7290	LT 0.0417	0.6540 a	0.2080 a	0.4170 b	0.3580 b	LT 0.0330
07/27/89	23278 23279	FC3	1.7700 a	LT 0.0295	LT 0.0243	LT 0.0208	0.1110	LT 0.0417	0.8950 a	0.3080	0.3450 b	0.1010 a	LT 0.0330
07/27/89	23280 23281	FC4	1.9800 a	LT 0.0295	LT 0.0243	LT 0.0208	0.7170	LT 0.0417	0.9670 a	0.3470 a	0.3750 b	0.1130 b	LT 0.0330
07/27/89	23282 23283	FC5	1.0800 a	LT 0.0295	LT 0.0243	LT 0.0208	0.7720	LT 0.0417	0.5700 a	0.2110 a	0.3680 b	0.1380 b	LT 0.0330

a - t/c weight >.25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
07/15/89	23247	23248	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.3960	1.8700	LT 0.0174	LT 0.1020	LT 0.0399	0.3920	LT 0.0330	1.3300
07/15/89	23249	23250	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.4260	2.0900	LT 0.0174	LT 0.1020	LT 0.0399	0.4540	LT 0.0330	1.3500
07/15/89	23251	23252	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.4660	2.0100	LT 0.0174	LT 0.1020	LT 0.0399	0.3940	0.5410 a	1.4000
07/21/89	23254	23255	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.1630	1.1400	LT 0.0174	LT 0.1020	LT 0.0399	0.3300	0.1650 b	0.6460
07/21/89	23257	23258	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.1490	1.2200	LT 0.0174	LT 0.1020	LT 0.0399	0.2400	LT 0.0330	0.5760
07/21/89	23260	23261	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.1750	1.1900	LT 0.0174	LT 0.1020	LT 0.0399	0.2440	LT 0.0330	0.6630
07/21/89	23263	23264	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.1440	1.2700	LT 0.0174	LT 0.1020	LT 0.0399	0.1760	LT 0.0330	0.5320
07/21/89	23266	23267	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.0373	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.1550	LT 0.0330	LT 0.1410
07/21/89	23269	23270	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.1330	1.5200	LT 0.0174	LT 0.1020	LT 0.0399	0.2360	0.3850 b	0.5020
07/27/89	23274	23275	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.4140	2.0000	LT 0.0174	LT 0.1020	LT 0.0399	1.3100	0.1230 b	1.4500
07/27/89	23276	23277	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.5560	2.1500	LT 0.0174	LT 0.1020	LT 0.0399	1.3500	LT 0.0330	1.7400
07/27/89	23278	23279	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.1040	1.0500	LT 0.0174	LT 0.1020	LT 0.0399	0.7320	LT 0.0330	0.3160
07/27/89	23280	23281	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.5800	2.1200	LT 0.0174	LT 0.1020	LT 0.0399	1.3300	LT 0.0330	1.6000
07/27/89	23282	23283	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.5610	2.6700	LT 0.0174	LT 0.1020	LT 0.0399	1.4400	0.3300 b	1.8600

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED — ROCKY MOUNTAIN ARSENAL PROGRAM — 04/05/91

ALL UNITS ARE IN UG/M3 — SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
08/2/89	23267	23288	FC4	1.4800 a	LT 0.0295	LT 0.0243	LT 0.0208	1.1500	LT 0.0417	2.0900 a	0.2520	1.1600 b	LT 0.0208	LT 0.0330
08/8/89	23289	23290	FC1	1.2200 a	LT 0.0295	LT 0.0243	LT 0.0208	0.6040	LT 0.0417	1.1800 a	0.2240 a	3.4300 b	0.1870 b	LT 0.0330
08/8/89	23291	23292	FC2	1.1700 a	LT 0.0295	LT 0.0243	0.0364 b	0.9190	LT 0.0417	1.2700 a	0.2630 a	3.2600 a	0.4160 a	LT 0.0330
08/8/89	23293	23294	FC3	1.2500 a	LT 0.0295	LT 0.0243	LT 0.0208	0.7270	LT 0.0417	1.1400 a	0.2590 a	3.1500 b	0.1180 b	LT 0.0330
08/8/89	23295	23296	FC4	1.4000 a	LT 0.0295	LT 0.0243	LT 0.0208	0.9590	LT 0.0417	1.4400 a	0.2710 a	4.0600 b	0.15[illegible] b	LT 0.0330
08/8/89	23297	23298	FC5	0.9710 a	LT 0.0295	LT 0.0243	LT 0.0208	0.3570	LT 0.0417	1.1600 a	0.2260 a	3.5700 b	0.2160 b	LT 0.0330
08/14/89	23302	23303	FC1	1.0300 a	LT 0.0295	LT 0.0243	LT 0.0208	1.3200	LT 0.0417	1.1700 a	0.2790 a	0.4590 b	0.1100 b	LT 0.0330
08/14/89	23305	23306	FC2	1.1100 a	LT 0.0295	LT 0.0243	LT 0.0208	1.3700	LT 0.0417	1.1600 a	0.2940 a	0.2300 b	0.1420 b	LT 0.0330
08/14/89	23308	23309	FC2D	0.9090 a	LT 0.0295	LT 0.0243	LT 0.0208	1.4500	LT 0.0417	1.2000 a	0.2400 a	0.2000 b	0.2180 a	LT 0.0330
08/14/89	23311	23312	FC3	1.0700 a	LT 0.0295	LT 0.0243	LT 0.0208	1.3600	LT 0.0417	1.6400 a	0.2880 a	0.4000 b	0.0664 b	LT 0.0330
08/14/89	23317	23318	FC5	0.8730 a	LT 0.0295	LT 0.0243	LT 0.0208	1.3100	LT 0.0417	1.1600 a	0.2120 a	0.3390 b	0.1170 a	LT 0.0330
08/20/89	23324	23325	FC4	1.1500 a	LT 0.0295	LT 0.0243	LT 0.0208	0.7190	LT 0.0417	1.4000 a	0.3480 a	1.1200 a	0.1450 b	LT 0.0330
08/26/89	23337	23338	FC1	1.3700 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5990	LT 0.0417	1.1200 a	0.3310 a	0.4360 b	0.1270 b	LT 0.0330
08/26/89	23339	23340	FC2	1.0200 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5990 b	LT 0.0417	1.1000 a	0.2910 a	0.4080	0.1740	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
08/2/89	23287	23288	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.9920	5.0000	LT 0.0174	LT 0.1020	LT 0.0399	2.5000	LT 0.0330	2.9200
08/8/89	23289	23290	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.6290	1.9200	LT 0.0174	LT 0.1020	LT 0.0399	0.5590	0.2690 a	1.7500
08/8/89	23291	23292	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.7770	2.9700	LT 0.0174	LT 0.1020	LT 0.0399	0.6010	0.0728	2.2300
08/8/89	23293	23294	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.5540	1.8000	LT 0.0174	LT 0.1020	LT 0.0399	0.6500	0.0633	1.5900
08/8/89	23295	23296	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.7010	2.1400	LT 0.0174	LT 0.1020	LT 0.0399	0.5170	0.0635	1.8800
08/8/89	23297	23298	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.6790	1.8600	LT 0.0174	LT 0.1020	LT 0.0399	0.5000	0.1890 a	1.7100
08/14/89	23302	23303	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.9610	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.5690	0.0651 b	2.6300
08/14/89	23305	23306	FC2	LT 0.0382	LT 0.0451	LT 0.0469	1.0100	2.6700	LT 0.0174	LT 0.1020	LT 0.0399	0.6860	LT 0.0330	2.6400
08/14/89	23308	23309	FC2D	LT 0.0382	LT 0.0451	LT 0.0469	1.0200	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.6180	LT 0.0330	2.6500
08/14/89	23311	23312	FC3	LT 0.0382	LT 0.0451	LT 0.0469	1.0400	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.5360	LT 0.0330	2.6400
08/14/89	23317	23318	FC5	LT 0.0382	LT 0.0451	LT 0.0469	1.0500	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.5090	0.4420 a	2.5100
08/20/89	23324	23325	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.5400	GT 0.3470	LT 0.0174	LT 0.1020	LT 0.0399	0.4460	LT 0.0330	2.0100
08/26/89	23337	23338	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.4930	2.3200	0.1190	LT 0.1020	LT 0.0399	0.5280	0.1770 a	1.8700
08/26/89	23339	23340	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.4580 b	2.1800 b	LT 0.0174	LT 0.1020	LT 0.0399	0.5990 b	LT 0.0330	1.7300 b

a - t/c weight).25t weight
b - Detected on t/c only
[redacted]lue I[redacted]CRL; N[redacted]te Av[redacted]

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
08/26/89	23341 23342	FC2D	0.8960 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5020	LT 0.0417	0.8640 a	0.2450 a	0.3140 b	0.1260 b	LT 0.0330
08/26/89	23343 23344	FC3	1.1000 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4960	LT 0.0417	1.2100 a	0.3030 a	0.3910 b	0.0733 b	LT 0.0330
08/26/89	23345 23346	FC4	1.2200 a	LT 0.0295	LT 0.0243	LT 0.0208	0.5920	LT 0.0417	1.1200 a	0.2640 a	0.4910 b	0.0502 b	LT 0.0330
08/26/89	23347 23348	FC5	0.9750 a	LT 0.0295	LT 0.0243	LT 0.0208	0.4880	LT 0.0417	0.9540 a	0.2870 a	0.2900 b	0.0826 b	LT 0.0330
09/1/89	23351 23352	FC1	0.6440 a	LT 0.0295	LT 0.0243	0.0254 b	0.1020	LT 0.0417	0.4570 a	0.3650 a	0.1150 b	0.1020 b	LT 0.0330
09/1/89	23353 23354	FC2	0.6690 a	LT 0.0295	LT 0.0243	0.0220 b	0.0908	LT 0.0417	0.4020 a	0.3370 a	0.1340 b	0.2310 a	LT 0.0330
09/1/89	23355 23356	FC3	0.6610 a	LT 0.0295	LT 0.0243	LT 0.0208	0.0736	LT 0.0417	0.3510 a	0.3980 a	0.1430 b	0.1930 a	LT 0.0330
09/1/89	23357 23358	FC4	0.6630 a	LT 0.0295	LT 0.0243	0.0227 b	0.0839	LT 0.0417	0.2740 a	0.3550 a	0.1410 b	0.0993 b	LT 0.0330
09/1/89	23359 23360	FC5	0.5720 a	LT 0.0295	LT 0.0243	LT 0.0208	0.0667	LT 0.0417	0.5840 a	0.3420 a	0.1080 b	0.0858 b	LT 0.0330
09/7/89	23364 23365	FC1	0.7140 a	LT 0.0295	LT 0.0243	0.0267 b	0.2740	LT 0.0417	0.6560 a	0.3570 a	0.2160 a	0.1480 a	LT 0.0330
09/7/89	23367 23368	FC2	0.6010 a	LT 0.0295	LT 0.0243	0.0219 b	0.1560	LT 0.0417	0.2690 a	0.3290 a	0.1410 b	0.2090 b	LT 0.0330
09/7/89	23370 23371	FC2D	0.7610 a	LT 0.0295	LT 0.0243	0.0377 b	0.1990	LT 0.0417	0.6130 a	0.3570 a	0.1810 b	0.3140 a	LT 0.0330
09/7/89	23373 23374	FC3	0.7250 a	LT 0.0295	LT 0.0243	0.0264 b	0.2050	LT 0.0417	0.4720 a	0.3650 a	0.1640 b	0.0710 b	LT 0.0330
09/7/89	23376 23377	FC4	0.8570 a	LT 0.0295	LT 0.0243	0.0489 b	0.2620	LT 0.0417	0.6560 a	0.4260 a	0.1760 b	0.0643 b	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
08/26/89	23341	23342	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.3450	2.0800	LT 0.0174	LT 0.1020	LT 0.0399	0.5020	LT 0.0521	1.4700
08/26/89	23343	23344	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.3910	2.2400	LT 0.0174	LT 0.1020	LT 0.0399	0.4270	LT 0.0521	1.5300
08/26/89	23345	23346	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.4180	2.2300	0.2000	LT 0.1020	LT 0.0399	0.4530	LT 0.0330	1.6700
08/26/89	23347	23348	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.3830	2.2000	0.1520	LT 0.1020	LT 0.0399	0.4180	0.2200 a	1.5000
09/1/89	23351	23352	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.0781	0.6010	0.0491	LT 0.1020	LT 0.0399	0.2210	0.2230 a	0.2770
09/1/89	23353	23354	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.0721	0.5780	0.0605	LT 0.1020	LT 0.0399	0.1640	LT 0.0330	0.2570
09/1/89	23355	23356	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.0627	0.4710	0.0467	LT 0.1020	LT 0.0399	0.1340	LT 0.0330	0.2080
09/1/89	23357	23358	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.0618	0.5360	0.0354	LT 0.1020	LT 0.0399	0.1320	LT 0.0330	0.2390
09/1/89	23359	23360	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.0500	0.4170	0.0378	LT 0.1020	LT 0.0399	0.0986	LT 0.0330	0.1770
09/7/89	23364	23365	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.1920	1.2100	0.0779	LT 0.1020	LT 0.0399	0.2740	0.0818 b	0.7860
09/7/89	23367	23368	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.1020	0.7830	0.0388	LT 0.1020	LT 0.0399	0.1770	LT 0.0330	0.4380
09/7/89	23370	23371	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.1410	0.9160	0.0636 a	LT 0.1020	LT 0.0399	0.1980	LT 0.0330	0.5530
09/7/89	23373	23374	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.1390	1.0100	0.0572	LT 0.1020	LT 0.0399	0.1700	LT 0.0330	0.5470
09/7/89	23376	23377	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.1770	1.2100	0.0728	LT 0.1020	LT 0.0399	0.1880	LT 0.0330	0.6950

a - t/c weight).25t weight
b - Detected on t/c only
[illegible] Value [illegible] CRL; [illegible] Estimate Available

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
09/7/89	23379	23380	FC5	0.8900 a	LT 0.0295	LT 0.0243	0.0317 b	0.3180	LT 0.0417	0.6630 a	0.4710 a	0.2600 a	0.2240 a	LT 0.0330
09/13/89	23386	23387	FC2	1.4300 a	LT 0.0295	LT 0.0243	0.0769	0.4560	LT 0.0417	1.1600	0.7920 a	0.5750 a	0.2690 a	LT 0.0330
09/13/89	23388	23389	FC3	1.6900 a	LT 0.0295	LT 0.0243	0.0994	0.6250	LT 0.0417	1.3000	0.9690 a	0.5740 a	0.2990 a	LT 0.0330
09/13/89	23390	23391	FC4	1.5100 a	LT 0.0295	LT 0.0243	0.0891 b	0.5470 b	LT 0.0417	1.2300 a	0.8150 a	0.5220 a	0.2710 a	LT 0.0330
09/13/89	23392	23393	FC5	1.3900 a	LT 0.0295	LT 0.0243	0.0929	0.4650	LT 0.0417	1.1700	0.9380 a	0.5430 a	0.3100 a	LT 0.0330
09/19/89	23397	23398	FC1	1.2500 a	LT 0.0295	LT 0.0243	0.0254 b	0.1630	LT 0.0417	1.1800 a	0.5660 a	0.7670 b	0.3310 a	LT 0.0330
09/19/89	23400	23401	FC2	1.2300 a	LT 0.0295	LT 0.0243	0.0421 b	0.3770	LT 0.0417	1.3700 a	0.4220 a	0.5140 b	0.4200 a	LT 0.0330
09/19/89	23403	23404	FC2D	1.3400 a	LT 0.0295	LT 0.0243	0.0334 b	0.4110	LT 0.0417	1.3400 a	0.4600 a	0.6510 b	0.5030 a	LT 0.0330
09/19/89	23406	23407	FC3	1.3500 a	LT 0.0295	LT 0.0243	0.0365 b	0.6030	LT 0.0417	1.3100 a	0.5790 a	0.4610 b	0.1500 a	LT 0.0330
09/19/89	23409	23410	FC4	1.3600 a	LT 0.0295	LT 0.0243	0.0325 b	0.4880	LT 0.0417	1.4300 a	0.5600 a	0.3830 b	0.1440 a	LT 0.0330
09/19/89	23412	23413	FC5	1.4100 a	LT 0.0295	LT 0.0243	0.0327 b	0.7610	LT 0.0417	1.4500 a	0.5860 a	0.4350 b	0.3290 a	LT 0.0330
09/25/89	23417	23418	FC1	1.6700 a	LT 0.0295	LT 0.0243	0.0392 b	1.5600	LT 0.0417	2.4300 a	0.4340 a	0.6690 a	0.3290 a	LT 0.0330
09/25/89	23419	23420	FC2	1.7900 a	LT 0.0295	LT 0.0243	LT 0.0208	1.7600	LT 0.0417	2.7200 a	0.4630 a	0.4480 b	0.3020 a	LT 0.0330
09/25/89	23421	23422	FC3	1.8000 a	LT 0.0295	LT 0.0243	0.0311 b	1.7000	LT 0.0417	2.7800 a	0.5710 a	0.6200 a	0.1870 a	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
09/7/89	23379 23380	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.2190	1.5800	0.0945	LT 0.1020	LT 0.0399	0.2920	0.1060 b	0.9560
09/13/89	23386 23387	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.3580	1.8900	0.0453	LT 0.1020	LT 0.0399	0.3390	LT 0.0330	1.3700
09/13/89	23388 23389	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.4690	2.1300	0.0525	LT 0.1020	LT 0.0399	0.4000	LT 0.0330	1.7500
09/13/89	23390 23391	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.4180 b	1.9300 b	0.0447 b	LT 0.1020	LT 0.0399	0.3380 b	LT 0.0330	1.5400 b
09/13/89	23392 23393	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.3880	1.8100	0.0450	LT 0.1020	LT 0.0399	0.3170	LT 0.0330	1.3600
09/19/89	23397 23398	FC1	LT 0.0382	LT 0.0451	LT 0.0469	0.1470	1.7600	LT 0.0174	LT 0.1020	LT 0.0399	0.4560	0.0798	0.5570
09/19/89	23400 23401	FC2	LT 0.0382	LT 0.0451	LT 0.0469	0.3230	GT 0.3470	0.0214 b	LT 0.1020	LT 0.0399	0.4110	LT 0.0330	1.2300
09/19/89	23403 23404	FC20	LT 0.0382	LT 0.0451	LT 0.0469	0.3770	2.8100	0.0914	LT 0.1020	LT 0.0399	0.4110	0.0589	1.3400
09/19/89	23406 23407	FC3	LT 0.0382	LT 0.0451	LT 0.0469	0.4610	2.8700	0.0982	LT 0.1020	LT 0.0399	0.5040	0.0894	1.6300
09/19/89	23409 23410	FC4	LT 0.0382	LT 0.0451	LT 0.0469	0.4530	GT 0.3470	0.1210	LT 0.1020	LT 0.0399	0.4180	0.0679	1.5700
09/19/89	23412 23413	FC5	LT 0.0382	LT 0.0451	LT 0.0469	0.5800	3.6200	0.1400	LT 0.1020	LT 0.0399	0.4710	0.3280	1.9900
09/25/89	23417 23418	FC1	LT 0.0382	LT 0.0451	LT 0.0469	1.0400	GT 0.3470	0.1410	LT 0.1020	LT 0.0399	1.2500	0.1030	3.0600
09/25/89	23419 23420	FC2	LT 0.0382	LT 0.0451	LT 0.0469	1.2400	GT 0.3470	0.1810	LT 0.1020	LT 0.0399	1.3400	0.1030	3.3100
09/25/89	23421 23422	FC3	LT 0.0382	LT 0.0451	LT 0.0469	1.1900	GT 0.3470	0.2000	LT 0.1020	LT 0.0399	1.2600	0.0827	3.5700

a - t/c weight).25t weight
b - Detected on t/c only
[redacted]Value [redacted] CRL; [redacted]ste A[redacted]

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
09/25/89	23423 23424	FC4	1.7800 a	LT 0.0295	LT 0.0243	LT 0.0208	1.8100	LT 0.0417	3.0000 a	0.4580 a	0.6620 b	0.1800 a	LT 0.0330
10/1/89	23430 23431	FC1	1.2300 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7720	LT 0.0420	1.7900 a	0.3400 a	0.7720 b	0.1860 a	LT 0.0330
10/1/89	23433 23434	FC2	1.2800 a	LT 0.0300	LT 0.0240	LT 0.0210	0.8650	0.1120 a	1.5200 a	0.3500 a	0.8790 a	1.5000 a	LT 0.0330
10/1/89	23436 23437	FC2D	1.6200 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3780	0.1620 a	1.7500 a	0.4300 a	0.9970 b	1.6800 a	LT 0.0330
10/1/89	23439 23440	FC3	2.0000 a	LT 0.0300	LT 0.0240	LT 0.0210	1.0700	LT 0.0420	2.1800 a	0.5200 a	1.0100 a	0.1340 a	LT 0.0330
10/1/89	23442 23443	FC4	1.6300 a	LT 0.0300	LT 0.0240	LT 0.0210	1.2700	LT 0.0420	2.1600 a	0.4300 a	1.1300 b	0.1120 a	LT 0.0330
10/1/89	23445 23446	FC5	1.1700 a	LT 0.0300	LT 0.0240	LT 0.0210	1.0000	LT 0.0420	1.0700 a	0.3500 a	1.4500 b	0.3250 a	LT 0.0330
10/7/89	23453 23454	FC1	2.1700 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4900	LT 0.0420	2.2700	0.7700 a	0.5320 a	0.9490 a	LT 0.0330
10/7/89	23455 23456	FC2	2.1800 a	LT 0.0300	LT 0.0240	0.0290 b	1.3300	LT 0.0420	2.1500	0.7560 a	0.5120 b	1.0300 a	LT 0.0330
10/7/89	23457 23458	FC3	2.2000 a	LT 0.0300	LT 0.0240	0.0220 b	1.4800	LT 0.0420	2.1600	0.8040 a	0.5150 b	0.5000 a	LT 0.0330
10/7/89	23459 23460	FC4	2.9000 a	LT 0.0300	LT 0.0240	0.0460 b	1.8300	LT 0.0420	2.6600 a	0.9050 a	0.8280 b	0.3500 a	LT 0.0330
10/7/89	23461 23462	FC5	2.3600 a	LT 0.0300	LT 0.0240	0.0230 b	0.2100	LT 0.0420	2.7800	0.8570 a	0.4840 b	1.1800 a	LT 0.0330
10/13/89	23466 23467	FC1	2.1100 a	LT 0.0300	LT 0.0240	LT 0.0210	1.0400	LT 0.0420	1.8300 a	0.4200 a	0.8990 a	0.3300 b	LT 0.0330
10/13/89	23469 23470	FC2	1.8900 a	LT 0.0300	LT 0.0240	LT 0.0210	1.1400	LT 0.0420	1.6400 a	0.3500 a	0.8730 a	0.8090 a	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
12/18/89	23639	23640	FC1	1.8300 a	LT 0.0300	LT 0.0240	0.2000	0.8790	LT 0.0420	1.6900	1.4300	0.6180 a	0.2010	LT 0.0330
12/18/89	23641	23642	FC2	1.8100 a	LT 0.0300	LT 0.0240	0.1800	0.6970	LT 0.0420	1.2400	1.3100	0.7900 a	0.6970	LT 0.0330
12/18/89	23643	23644	FC3	1.9300 a	LT 0.0300	LT 0.0240	0.2100	0.7860	LT 0.0420	1.4900	1.5200	0.6930 a	0.4620	LT 0.0330
12/18/89	23645	23646	FC4	2.1400	LT 0.0300	LT 0.0240	0.2400	0.9470	LT 0.0420	1.7400	1.6400	0.8200 a	0.2500	LT 0.0330
12/18/89	23647	23648	FC5	1.8700 a	LT 0.0300	LT 0.0240	0.2000	0.8100	LT 0.0420	1.5700	1.4300	0.6630 a	0.2200	LT 0.0330
12/24/89	23652	23653	FC1	1.6200 a	LT 0.0300	LT 0.0240	LT 0.0210	1.9200	LT 0.0420	3.1400	1.0500 a	0.5070 a	0.5320 a	LT 0.0330
12/24/89	23655	23656	FC2	1.3700 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4100	LT 0.0420	2.7700	0.9230	0.5990 a	0.9690 a	LT 0.0330
12/24/89	23658	23659	FC2D	1.2500 a	LT 0.0300	LT 0.0240	LT 0.0210	0.0450	LT 0.0420	3.1600 a	0.8590	0.2700	0.8990	LT 0.0330
12/24/89	23661	23662	FC3	1.2800 a	LT 0.0300	LT 0.0240	0.1100	1.0100	LT 0.0420	2.5000	0.8390	0.3800 b	0.2360 a	LT 0.0330
12/24/89	23664	23665	FC4	1.4100 a	LT 0.0300	LT 0.0240	LT 0.0210	1.6500	LT 0.0420	2.9200	0.8850	0.6000 a	0.2960	LT 0.0330
12/24/89	23667	23668	FC5	1.4100 a	LT 0.0300	LT 0.0240	0.1300	1.7100	LT 0.0420	3.5000 a	0.8850	0.2340	0.7380 a	LT 0.0330
12/30/89	23672	23673	FC1	1.5100 a	LT 0.0300	LT 0.0240	0.1200	1.3900	LT 0.0420	2.5300	0.9130 a	0.9330 a	0.5330	LT 0.0330
12/30/89	23674	23675	FC2	1.5500 a	LT 0.0300	LT 0.0240	LT 0.0210	1.1800	LT 0.0420	1.6500	0.8930 a	0.9000 a	0.5400	LT 0.0330
12/30/89	23676	23677	FC3	2.5700 a	LT 0.0300	LT 0.0240	0.1300	1.2700	LT 0.0420	3.3300 a	1.3700 a	0.9850 a	0.4630 a	LT 0.0330

a - t/c weight).25t weight
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CT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
10/13/89	23472 23473	FC2D	1.6600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.1600	LT 0.0420	1.0800 a	0.3300 a	1.1800 a	0.6500 b	LT 0.0330
10/13/89	23475 23476	FC3	2.3500 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6440	LT 0.0420	1.7500 a	0.4200 a	0.6700 a	0.1490 a	LT 0.0330
10/13/89	23478 23479	FC4	2.0000 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4900	LT 0.0420	1.5200	0.3200 a	1.6000 a	0.1180 a	LT 0.0330
10/13/89	23481 23482	FC5	2.0300 a	LT 0.0300	LT 0.0240	LT 0.0210	0.8000	LT 0.0420	1.8900 a	0.3800 a	0.9860 a	0.2810 a	LT 0.0330
10/19/89	23486 23487	FC1	2.7500 a	LT 0.0300	LT 0.0240	0.1500	0.9620	LT 0.0420	1.6400	0.7090 a	1.0400 a	0.7030 a	LT 0.0330
10/19/89	23488 23489	FC2	2.8000 a	LT 0.0300	LT 0.0240	LT 0.0210	0.8110	0.0900	1.8400	0.7810 a	1.0600 a	2.2300 a	LT 0.0330
10/19/89	23490 23491	FC3	2.7000 a	LT 0.0300	LT 0.0240	0.0580	1.6300	LT 0.0420	1.7600	0.8500 a	1.1400 a	0.5400 a	LT 0.0330
10/19/89	23492 23493	FC4	3.2200 a	LT 0.0300	LT 0.0240	0.1800	2.0000	LT 0.0420	1.9900	0.8500 a	1.1600 a	0.5400 a	LT 0.0330
10/19/89	23494 23495	FC5	2.9800 a	LT 0.0300	LT 0.0240	LT 0.0210	1.8900	LT 0.0420	1.7500	0.8760 a	0.5960 b	0.8430 a	LT 0.0330
10/25/89	23499 23500	FC1	3.8300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.5200	LT 0.0420	GT 0.3500	0.9750 a	2.5300 a	1.3200 a	LT 0.0330
10/25/89	23502 23503	FC2	3.7200 a	LT 0.0300	LT 0.0240	0.0260 b	2.8100	0.2210 a	GT 0.3500	0.9270 a	1.7800 a	1.8200 a	LT 0.0330
10/25/89	23505 23506	FC2D	3.8300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.3700	0.2100	GT 0.3500	0.9750 a	1.4400 a	1.8100 a	LT 0.0330
10/25/89	23508 23509	FC3	4.1700 a	LT 0.0300	LT 0.0240	LT 0.0210	3.1900	LT 0.0420	GT 0.3500	1.1400 a	1.6000 a	0.5710 a	LT 0.0330
10/25/89	23511 23512	FC4	3.8700 a	LT 0.0300	LT 0.0240	LT 0.0210	3.0800	LT 0.0420	GT 0.3500	1.0300 a	1.8000 a	0.5100 a	LT 0.0330

a - t/c weight >.25t weight
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GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED — ROCKY MOUNTAIN ARSENAL PROGRAM — 04/05/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
09/25/89	23423 23424	FC4	LT 0.0382	LT 0.0451	LT 0.0469	1.2500	GT 0.3470	0.2140	LT 0.1020	LT 0.0399	1.2900	0.0840	3.4800
10/1/89	23430 23431	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.5260	GT 0.3500	0.0760	LT 0.1000	LT 0.0400	0.4210	LT 0.0520	1.7200
10/1/89	23433 23434	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.5540	GT 0.3500	0.0960	LT 0.1000	LT 0.0400	0.5540	LT 0.0520	1.7600
10/1/89	23436 23437	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.3780	GT 0.3500	0.1600	LT 0.1000	LT 0.0400	0.7560	0.0590 b	1.3100
10/1/89	23439 23440	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.7410	GT 0.3500	0.1700	LT 0.1000	LT 0.0400	0.5930	LT 0.0520	2.0400
10/1/89	23442 23443	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.8130	GT 0.3500	0.1600	LT 0.1000	LT 0.0400	0.7070	LT 0.0520	2.2300
10/1/89	23445 23446	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.6550	GT 0.3500	0.1000	LT 0.1000	LT 0.0400	0.6900	0.1700 a	1.8300
10/7/89	23453 23454	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.1200	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.6440	0.1200	2.5400
10/7/89	23455 23456	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.9220	GT 0.3500	0.1500	LT 0.1000	LT 0.0400	0.6480	0.0980	2.4200
10/7/89	23457 23458	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.0300	GT 0.3500	0.2300	LT 0.1000	LT 0.0400	0.6530	0.0830	2.5800
10/7/89	23459 23460	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.4100	GT 0.3500	0.2400	LT 0.1000	LT 0.0400	0.7590	0.0870	GT 0.6900
10/7/89	23461 23462	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.2200	GT 0.3500	0.1700	LT 0.1000	LT 0.0400	0.5540	0.3900	0.7960
10/13/89	23466 23467	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.7890	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	2.2200	0.2160 a	2.5100
10/13/89	23469 23470	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.8210	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	2.4300	0.0690	2.5600

a - t/c weight).25t weight
b - Detected on t/c only
[redacted]alue I[redacted]CRL; N[redacted]te Av[redacted]

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
10/13/89	23472	23473	FC20	1.6600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.1600	LT 0.0420	1.0800 a	0.3300 a	1.1800 a	0.6500 b	LT 0.0330
10/13/89	23475	23476	FC3	2.3500 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6440	LT 0.0420	1.7500 a	0.4200 a	0.6700 a	0.1490 a	LT 0.0330
10/13/89	23478	23479	FC4	2.0000 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4900	LT 0.0420	1.5200	0.3200 a	1.6000 a	0.1180 a	LT 0.0330
10/13/89	23461	23462	FC5	2.0300 a	LT 0.0300	LT 0.0240	LT 0.0210	0.8000	LT 0.0420	1.8900 a	0.3800 a	0.9860 a	0.2810 a	LT 0.0330
10/19/89	23466	23487	FC1	2.7500 a	LT 0.0300	LT 0.0240	0.1500	0.9620	LT 0.0420	1.6400	0.7090 a	1.0400 a	0.7030 a	LT 0.0330
10/19/89	23468	23489	FC2	2.8000 a	LT 0.0300	LT 0.0240	LT 0.0210	0.8110	0.0900	1.6600	0.7810 a	1.0600 a	2.2300 a	LT 0.0330
10/19/89	23490	23491	FC3	2.7000 a	LT 0.0300	LT 0.0240	0.0580	1.6300	LT 0.0420	1.7600	0.8500 a	1.1600 a	0.5400 a	LT 0.0330
10/19/89	23492	23493	FC4	3.2200 a	LT 0.0300	LT 0.0240	0.1800	2.0000	LT 0.0420	1.9900	0.8500 a	1.1600 a	0.5400 a	LT 0.0330
10/19/89	23494	23495	FC5	2.9800 a	LT 0.0300	LT 0.0240	LT 0.0210	1.8900	LT 0.0420	1.7500	0.8760 a	0.5960 b	0.8430 a	LT 0.0330
10/25/89	23499	23500	FC1	3.8300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.5200	LT 0.0420	GT 0.3500	0.9750 a	2.5300 a	1.3200 a	LT 0.0330
10/25/89	23502	23503	FC2	3.7200 a	LT 0.0300	LT 0.0240	0.0280 b	2.8100	0.2210 a	GT 0.3500	0.9270 a	1.7800 a	1.8200 a	LT 0.0330
10/25/89	23505	23506	FC20	3.8300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.3700	0.2100	GT 0.3500	0.9750 a	1.4400 a	1.8100 a	LT 0.0330
10/25/89	23508	23509	FC3	4.1700 a	LT 0.0300	LT 0.0240	LT 0.0210	3.1900	LT 0.0420	GT 0.3500	1.1400 a	1.6000 a	0.5710 a	LT 0.0330
10/25/89	23511	23512	FC4	3.8700 a	LT 0.0300	LT 0.0240	LT 0.0210	3.0800	LT 0.0420	GT 0.3500	1.0300 a	1.8000 a	0.5100 a	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

ALL UNITS ARE IN UG/M3 SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropene	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
10/13/89	23472 23473	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.8300	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	2.2000	0.0740	2.5600
10/13/89	23475 23476	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.6440	GT 0.3500	0.2300	LT 0.1000	LT 0.0400	2.2700	0.1200	1.8200
10/13/89	23478 23479	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.1300	GT 0.3500	0.0270	LT 0.1000	LT 0.0400	2.2900	0.1600	GT 0.6900
10/13/89	23481 23482	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.6180	GT 0.3500	0.2300	LT 0.1000	LT 0.0400	2.2500	0.5000 a	1.8500
10/19/89	23486 23487	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.8650	GT 0.3500	0.3200	LT 0.1000	LT 0.0400	2.2800	0.1200	2.1200
10/19/89	23488 23489	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.7770	GT 0.3500	0.2500	LT 0.1000	LT 0.0400	2.4000	0.0890	2.0600
10/19/89	23490 23491	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.5000	GT 0.3500	0.2800	LT 0.1000	LT 0.0400	2.7000	0.1300	GT 0.6900
10/19/89	23492 23493	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.8400	GT 0.3500	0.3200	LT 0.1000	LT 0.0400	2.7500	0.1500	GT 0.6900
10/19/89	23494 23495	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.5600	GT 0.3500	0.2100	LT 0.1000	LT 0.0400	2.8800	0.1700	3.1500
10/25/89	23499 23500	FC1	LT 0.0380	LT 0.0450	LT 0.0470	2.1600	GT 0.3500	0.6270	LT 0.1000	LT 0.0400	2.3800	0.4520	GT 0.6900
10/25/89	23502 23503	FC2	LT 0.0380	LT 0.0450	LT 0.0470	2.6700	GT 0.3500	0.8770	LT 0.1000	LT 0.0400	2.6000	0.2300	GT 0.6900
10/25/89	23505 23506	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	2.6200	GT 0.3500	1.1300	LT 0.1000	LT 0.0400	2.5900	0.2600	GT 0.6900
10/25/89	23508 23509	FC3	LT 0.0380	LT 0.0450	LT 0.0470	2.8400	GT 0.3500	0.8420	LT 0.1000	LT 0.0400	2.9500	0.3000	GT 0.6900
10/25/89	23511 23512	FC4	LT 0.0380	LT 0.0450	LT 0.0470	3.0100	GT 0.3500	1.1300	LT 0.1000	LT 0.0400	2.7700	0.2900	GT 0.6900

a - t/c weight >.25t weight
b - Detected on t/c only
[redacted]Value [redacted] CRL; [redacted]ate A[redacted]

EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
10/25/89	23514 23515	FC5	2.9900 a	LT 0.0300	LT 0.0240	LT 0.0210	2.2600	LT 0.0420	GT 0.3500	0.7590 a	1.2300 a	1.0300 a	LT 0.0330
10/31/89	23519 23520	FC1	3.3000 a	LT 0.0300	LT 0.0240	LT 0.0210	1.2700	LT 0.0420	1.5000	0.8060 a	0.6860 b	0.4500 a	LT 0.0330
10/31/89	23521 23522	FC2	3.2400 a	LT 0.0300	LT 0.0240	LT 0.0210	1.1600	LT 0.0420	1.3100	0.6790 a	0.6930 b	0.9620 a	LT 0.0330
10/31/89	23523 23524	FC3	3.4200 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4500	LT 0.0420	1.6800	0.7710 a	0.6950 a	0.2200 a	LT 0.0330
10/31/89	23525 23526	FC4	3.6100 a	LT 0.0300	LT 0.0240	LT 0.0210	1.8000	LT 0.0420	1.9400	0.8760 a	0.6560 b	0.2180 a	LT 0.0330
10/31/89	23527 23528	FC5	3.2300 a	LT 0.0300	LT 0.0240	LT 0.0210	1.2200	LT 0.0420	1.7300	0.8250 a	0.5260 b	0.5400 a	LT 0.0330
11/6/89	23532 23533	FC1	2.7200 a	LT 0.0300	LT 0.0240	0.0490	1.3300	LT 0.0420	1.6700 a	0.7900 a	1.0500 b	0.8500 a	LT 0.0330
11/6/89	23535 23536	FC2	2.7000 a	LT 0.0300	LT 0.0240	LT 0.0210	1.3800	0.0760	1.6700 a	0.7890 a	0.9000 b	2.1400 a	LT 0.0330
11/6/89	23538 23539	FC20	3.0500 a	LT 0.0300	LT 0.0240	0.1700	1.6800	0.0730	2.1400	0.9470 a	0.9120 b	2.2100 a	LT 0.0330
11/6/89	23541 23542	FC4	3.1600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.3100	LT 0.0420	1.7800	0.9960 a	1.2400 b	0.4500 a	LT 0.0330
11/6/89	23544 23545	FC5	2.8000 a	LT 0.0300	LT 0.0240	LT 0.0210	1.6400	LT 0.0420	1.9000	0.8520 a	0.9250 b	1.1000 a	LT 0.0330
11/12/89	23549 23550	FC1	1.1600 a	LT 0.0300	LT 0.0240	0.0320 b	1.1900	LT 0.0420	2.1700 a	0.4500 a	0.8610 a	0.2500 a	LT 0.0330
11/12/89	23553 23554	FC4	1.2800 a	LT 0.0300	LT 0.0240	0.0460 b	0.0300	LT 0.0420	2.1500 a	0.4800 a	0.5970 a	0.1630 a	LT 0.0330
11/12/89	23555 23556	FC5	1.0900 a	LT 0.0300	LT 0.0240	0.0250 b	1.2000	LT 0.0420	1.9000 a	0.4200 a	0.5330 a	0.3000 a	LT 0.0330

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GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
10/25/89	23514	23515	FC5	LT 0.0380	LT 0.0450	LT 0.0470	2.2400	GT 0.3500	0.7470	LT 0.1000	LT 0.0400	1.9200	0.4270	GT 0.6900
10/31/89	23519	23520	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.0800	GT 0.3500	0.1400	LT 0.1000	LT 0.0400	1.7000	0.1300	2.3500
10/31/89	23521	23522	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.7920	GT 0.3500	0.1100	LT 0.1000	LT 0.0400	1.4200	0.0950	2.0800
10/31/89	23523	23524	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.0000	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.7900	0.1200	2.6500
10/31/89	23525	23526	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.4800	GT 0.3500	0.2200	LT 0.1000	LT 0.0400	2.1000	0.1600	3.0200
10/31/89	23527	23528	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.9870	GT 0.3500	0.1700	LT 0.1000	LT 0.0400	1.9100	0.2300	2.4300
11/6/89	23532	23533	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.9860	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.6700	0.1300	2.0100
11/6/89	23535	23536	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.9690	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.9000	0.1500	2.0400
11/6/89	23538	23539	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	1.1900	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	2.3500	0.1600	2.8400
11/6/89	23541	23542	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.9620	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	2.1300	0.1500	2.5400
11/6/89	23544	23545	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.1300	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	2.0500	0.2000	2.8100
11/12/89	23549	23550	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.7720	GT 0.3500	0.1000	LT 0.1000	LT 0.0400	0.7020	0.1690 a	2.6300
11/12/89	23553	23554	FC4	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	0.8300	LT 0.0170	LT 0.1000	LT 0.0400	0.1600	LT 0.0520	LT 0.1400
11/12/89	23555	23556	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.7390	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.6690	0.2200	2.4300

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ROCKY MOUNTAIN ARSENAL PROGRAM

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
11/18/89	23560	23561	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.8640	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.5000	0.0800	2.7200
11/18/89	23563	23564	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.8390	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.5100	0.0610	2.5500
11/18/89	23566	23567	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.7120	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.1400	LT 0.0520	2.0500
11/18/89	23569	23570	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.2600	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.3200	0.0550	1.1100
11/18/89	23572	23573	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.9510	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.6900	0.0610	3.1300
11/18/89	23575	23576	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.9250	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.5100	0.0860	2.8800
11/24/89	23580	23581	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.0100	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.6060	0.0660	3.0300
11/24/89	23582	23583	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.9970	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.6870	0.0630	3.1300
11/24/89	23584	23585	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.0000	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.6670	0.0640	3.0000
11/24/89	23586	23587	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.9120	GT 0.3500	0.1100	LT 0.1000	LT 0.0400	0.5960	0.0600	2.8100
11/24/89	23588	23589	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.7480	GT 0.3500	0.1100	LT 0.1000	LT 0.0400	0.5100	0.0940	2.4800
11/30/89	23592	23593	FC1	LT 0.0380	LT 0.0450	LT 0.0470	2.2700	GT 0.3500	0.2900	LT 0.1000	LT 0.0400	2.3600	0.3300	4.2100
11/30/89	23594	23595	FC2	LT 0.0380	LT 0.0450	LT 0.0470	1.9100	GT 0.3500	0.2900	LT 0.1000	LT 0.0400	2.3300	0.2000	4.5900
11/30/89	23596	23597	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	1.7400	GT 0.3500	0.2800	LT 0.1000	LT 0.0400	2.0700	0.1800	3.7400

a - t/c weight).25t weight
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EGASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
11/18/89	23560	23561	FC1	1.3300 a	LT 0.0300	LT 0.0240	LT 0.0210	1.2600	LT 0.0420	1.7100	0.5690 a	0.5590 a	0.1850 a	LT 0.0330
11/18/89	23563	23564	FC2	1.9800 a	LT 0.0300	LT 0.0240	0.1200	1.2400	0.0500	1.6000	0.6390 a	0.6800 a	0.7140 a	LT 0.0330
11/18/89	23566	23567	FC20	1.4500 a	LT 0.0300	LT 0.0240	0.0820	0.9690	0.0490	1.3000	0.5390 a	0.4720 a	0.7120 a	LT 0.0330
11/18/89	23569	23570	FC3	1.7100 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3100	LT 0.0420	1.6000	0.6700 a	0.3900 b	0.1610 a	LT 0.0330
11/18/89	23572	23573	FC4	1.8900 a	LT 0.0300	LT 0.0240	0.1330	1.4600	LT 0.0420	2.0600	0.6900 a	0.5150 a	0.2050 a	LT 0.0330
11/18/89	23575	23576	FC5	1.8500 a	LT 0.0300	LT 0.0240	0.0700	1.4000	LT 0.0420	1.8300	0.7090 a	0.5520 a	0.3560 a	LT 0.0330
11/24/89	23580	23581	FC1	1.2100 a	LT 0.0300	LT 0.0240	0.0380 b	1.4100	LT 0.0420	2.3600 a	0.6240 a	0.7070 b	0.4050 a	LT 0.0330
11/24/89	23582	23583	FC2	1.3800 a	LT 0.0300	LT 0.0240	0.0640 b	1.5500	0.0560	2.5400 a	0.6970 a	1.0500 a	0.9100 a	LT 0.0330
11/24/89	23564	23565	FC3	1.2200 a	LT 0.0300	LT 0.0240	0.1020 a	1.4800	LT 0.0420	2.2600 a	0.5970 a	0.9890 a	0.2530 a	LT 0.0330
11/24/89	23586	23567	FC4	1.2600 a	LT 0.0300	LT 0.0240	0.0430 b	1.3700	LT 0.0420	2.2100 a	0.6310 a	0.9010 a	0.2510 a	LT 0.0330
11/24/89	23588	23589	FC5	1.1200 a	LT 0.0300	LT 0.0240	0.0670 a	1.0900	LT 0.0420	1.8300	0.6220 a	0.6120 b	0.5320 a	LT 0.0330
11/30/89	23592	23593	FC1	3.6900 a	LT 0.0300	LT 0.0240	LT 0.0210	2.6900	LT 0.0420	2.5800	0.7730 a	0.8970 a	0.4600 a	LT 0.0330
11/30/89	23594	23595	FC2	4.1700 a	LT 0.0300	LT 0.0240	0.2100	2.5800	0.1100	2.7000	0.8660 a	0.9880 a	2.0900	LT 0.0330
11/30/89	23596	23597	FC20	4.3300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.2700	0.1640 a	2.2900	0.9350 a	1.0400 a	2.0000 a	LT 0.0330

a - t/c weight).25t weight
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04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
11/30/89	23598	23599	FC3	4.0400 a	LT 0.0300	LT 0.0240	0.1300	2.5200	LT 0.0420	2.4000	0.9190 a	1.0700 a	0.3760	LT 0.0330
11/30/89	23600	23601	FC4	4.6000 a	LT 0.0300	LT 0.0240	LT 0.0210	2.7200	LT 0.0420	2.5000	0.8800 a	1.1200 a	0.4500 a	LT 0.0330
11/30/89	23602	23603	FC5	3.7800 a	LT 0.0300	LT 0.0240	LT 0.0210	2.3400	LT 0.0420	2.3400	0.7510 a	1.0600 a	0.8610 a	LT 0.0330
12/6/89	23606	23607	FC1	0.7300 a	LT 0.0300	LT 0.0240	0.0710	0.2200	LT 0.0420	0.7530 a	0.8990 a	0.2870 a	0.4300 a	LT 0.0330
12/6/89	23608	23609	FC2	0.7260 a	LT 0.0300	LT 0.0240	0.0770	0.1900	LT 0.0420	0.7920 a	0.9050	0.2800 a	0.4500 a	LT 0.0330
12/6/89	23610	23611	FC3	0.9090 a	LT 0.0300	LT 0.0240	0.0710	0.1900	LT 0.0420	0.6590 a	0.9410 a	0.3110 a	0.4800 a	LT 0.0330
12/6/89	23612	23613	FC4	0.9680 a	LT 0.0300	LT 0.0240	0.0750	LT 0.0280	LT 0.0420	0.8350 a	1.0100	0.3180 a	0.3760	LT 0.0330
12/6/89	23614	23615	FC5	0.8070 a	LT 0.0300	LT 0.0240	0.0560	LT 0.0280	LT 0.0420	0.5840	0.9400 a	0.3230 a	0.5020	LT 0.0330
12/12/89	23619	23620	FC1	2.5600 a	LT 0.0300	LT 0.0240	0.1700	0.0380 b	LT 0.0420	GT 0.3500	0.9620 a	0.6580 a	0.2670	LT 0.0330
12/12/89	23622	23623	FC2	3.9000 a	LT 0.0300	LT 0.0240	0.2500	0.0610	0.0930	GT 0.3500	1.1900	0.9380 a	1.4900	LT 0.0330
12/12/89	23625	23626	FC20	3.7800 a	LT 0.0300	LT 0.0240	0.2400	LT 0.0280	0.0640	1.6100	1.1300 a	1.1700 a	1.6700	LT 0.0330
12/12/89	23628	23629	FC3	3.7100 a	LT 0.0300	LT 0.0240	0.2200	1.4900	LT 0.0420	GT 0.3500	1.2300 a	0.8740 a	0.3230	LT 0.0330
12/12/89	23631	23632	FC4	3.4600 a	LT 0.0300	LT 0.0240	0.1700	1.9800	LT 0.0420	GT 0.3500	1.3400	0.6690 a	0.3330	LT 0.0330
12/12/89	23634	23635	FC5	3.1200 a	LT 0.0300	LT 0.0240	0.2300	1.6600	LT 0.0420	GT 0.3500	1.0500 a	0.7740 a	0.4080	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
11/30/89	23598 23599	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.9100	GT 0.3500	0.2700	LT 0.1000	LT 0.0400	2.2700	0.1900	4.2600
11/30/89	23600 23601	FC4	LT 0.0380	LT 0.0450	LT 0.0470	2.0800	GT 0.3500	0.2900	LT 0.1000	LT 0.0400	2.5100	0.3000	4.5200
11/30/89	23602 23603	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.8300	GT 0.3500	0.3000	LT 0.1000	LT 0.0400	2.1700	0.3000	3.9000
12/6/89	23606 23607	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.1200	0.6960	LT 0.0170	LT 0.1000	LT 0.0400	0.2100	LT 0.0520	0.4500
12/6/89	23608 23609	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.1100	0.7450	0.0350	LT 0.1000	LT 0.0400	0.2000	LT 0.0520	0.4000
12/6/89	23610 23611	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.1200	0.6910	0.0400	LT 0.1000	LT 0.0400	0.2100	LT 0.0520	0.4100
12/6/89	23612 23613	FC4	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	0.3600	LT 0.0170	LT 0.1000	LT 0.0400	0.0830	LT 0.0520	LT 0.1400
12/6/89	23614 23615	FC5	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	0.4520	LT 0.0170	LT 0.1000	LT 0.0400	0.1100	LT 0.0520	LT 0.1400
12/12/89	23619 23620	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0280 b	0.9720 a	LT 0.0170	LT 0.1000	LT 0.0400	0.7940	0.0810	LT 0.1400
12/12/89	23622 23623	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0810	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.8100	0.1300	0.2400
12/12/89	23625 23626	FC20	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	0.4920	LT 0.0170	LT 0.1000	LT 0.0400	0.2100	0.0880	LT 0.1400
12/12/89	23628 23629	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.3900	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	3.0500	0.1300	2.4800
12/12/89	23631 23632	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.6800	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	3.5100	0.1300	2.9800
12/12/89	23634 23635	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.4500	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	2.9100	0.1400	2.6400

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropene	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
12/18/89	23639	23640	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.7170	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.3910	0.0750	1.7600
12/18/89	23641	23642	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.5920	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.4700	0.0640	1.3600
12/18/89	23643	23644	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.6790	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.3930	0.0740	1.5700
12/18/89	23645	23646	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.8330	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.4170	0.0780	1.7800
12/16/89	23647	23648	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.7480	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.3740	0.0750	1.4600
12/24/89	23652	23653	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.4300	GT 0.3500	0.2200	LT 0.1000	LT 0.0400	0.6820	0.0670	3.2500
12/24/89	23655	23656	FC2	LT 0.0380	LT 0.0450	LT 0.0470	1.1700	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.5520	0.0590	3.1000
12/24/89	23658	23659	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.0530	3.7500	LT 0.0170	LT 0.1000	LT 0.0400	0.4300	0.0630	0.1500
12/24/89	23661	23662	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.9120	GT 0.3500	0.1600	LT 0.1000	LT 0.0400	0.6080	0.0770	2.3000
12/24/89	23664	23665	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.3700	GT 0.3500	0.1900	LT 0.1000	LT 0.0400	0.6470	0.0660	3.5600
12/24/89	23667	23668	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.4600	GT 0.3500	0.2200	LT 0.1000	LT 0.0400	0.6980	0.0740	3.6600
12/30/89	23672	23673	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.0500	GT 0.3500	0.0750	LT 0.1000	LT 0.0400	0.5120	0.0760	2.9200
12/30/89	23674	23675	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.8080	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.4380	LT 0.0520	2.5600
12/30/89	23676	23677	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.9670	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.4670	0.0690	2.6700

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EBASCO SERVICES INCORPORATED ROCKY MOUNTAIN ARSENAL PROGRAM 04/05/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
12/30/89	23678	23679	FC4	1.5400 a	LT 0.0300	LT 0.0240	0.1300	1.2500	LT 0.0420	2.3500	0.9070	0.7430 a	0.4370	LT 0.0330
12/30/89	23680	23681	FC5	1.7700 a	LT 0.0300	LT 0.0240	0.1400	LT 0.0280	LT 0.0420	2.2600	0.9480	0.6390 a	0.8820	LT 0.0330
01/5/90	23685	23686	FC1	2.6500 a	LT 0.0300	LT 0.0240	0.1600	0.2820 a	LT 0.0420	1.0500 a	0.8880	2.3000 a	0.7970	LT 0.0330
01/5/90	23688	23689	FC2	3.0300 a	LT 0.0300	LT 0.0240	0.1800	0.0820	0.0520	GT 0.3500	0.9070 a	1.9800 a	1.2400	LT 0.0330
01/5/90	23691	23692	FC2D	2.5800 a	LT 0.0300	LT 0.0240	0.1400	0.8220	0.0630	GT 0.3500	0.6300	1.5700 a	1.1400	LT 0.0330
01/5/90	23705	23706	FC2L	6.0000	LT 0.0300	LT 0.0240	LT 0.0210	2.3000	LT 0.0420	7.3900	0.7300	72.600 a	1.1000	LT 0.0330
01/5/90	23694	23695	FC3	1.9500 a	LT 0.0300	LT 0.0240	0.1700	1.6100	LT 0.0420	GT 0.3500	0.7410	1.5400 a	0.5000	LT 0.0330
01/5/90	23697	23698	FC4	2.8500 a	LT 0.0300	LT 0.0240	0.2100	2.2300	LT 0.0420	GT 0.3500	0.9950	2.0300 a	0.5210	LT 0.0330
01/5/90	23700	23701	FC5	1.9800	LT 0.0300	LT 0.0240	0.1900	0.9880	0.0450	GT 0.3500	0.8600	0.8380 a	0.8870	LT 0.0330
01/11/90	23709	23710	FC1	0.8110 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1900	LT 0.0420	0.8120 a	0.8360	0.2900 a	0.0990 a	LT 0.0330
01/11/90	23711	23712	FC2	0.9110	LT 0.0300	LT 0.0240	0.0550	0.0520	LT 0.0420	0.7280	0.7890	0.1940 a	0.1700	LT 0.0330
01/11/90	23713	23714	FC3	0.9190 a	LT 0.0300	LT 0.0240	0.0460	0.1800	LT 0.0420	0.7460 a	0.7640 a	0.2010 a	0.0930	LT 0.0330
01/11/90	23715	23716	FC4	0.9420 a	LT 0.0300	LT 0.0240	0.0510	0.2200	LT 0.0420	0.8920 a	0.7940	0.2050 a	0.0990	LT 0.0330
01/11/90	23717	23718	FC5	0.6660 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1200	LT 0.0420	0.7070 a	0.6220 a	0.1950 a	0.0740	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
[redacted]alue I[redacted]CRL; N[redacted]te Ava[redacted]

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
12/30/89	23678 23679	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.9760	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.4880	0.0640	3.1000
12/30/89	23680 23681	FC5	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	1.7700	LT 0.0170	LT 0.1000	LT 0.0400	0.1500	0.0620	LT 0.1400
01/5/90	23685 23686	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.2590 a	GT 0.3500	0.1600	LT 0.1000	LT 0.0400	1.4700	0.1300	0.8870 a
01/5/90	23688 23689	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0870	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.1100	0.1200	0.2900
01/5/90	23691 23692	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.8160	GT 0.3500	0.1800	LT 0.1000	LT 0.0400	1.4400	0.1100	2.0700
01/5/90	23705 23706	FC2L	LT 0.0380	LT 0.0450	LT 0.0470	1.5000	7.3900	0.4700	LT 0.1000	LT 0.0400	2.3000	LT 0.0520	5.3000
01/5/90	23694 23695	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.4100	GT 0.3500	0.1900	LT 0.1000	LT 0.0400	1.5100	0.1400	GT 0.6900
01/5/90	23697 23698	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.6800	GT 0.3500	0.3780	LT 0.1000	LT 0.0400	1.8600	0.1500	GT 0.6900
01/5/90	23700 23701	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.0500	GT 0.3500	LT 0.0170	LT 0.1000	LT 0.0400	1.5900	0.1400	GT 0.6900
01/11/90	23709 23710	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.1300	1.1800	LT 0.0170	LT 0.1000	LT 0.0400	0.1200	LT 0.0520	0.5100
01/11/90	23711 23712	FC2	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	0.5800	0.1200	LT 0.1000	LT 0.0400	LT 0.0330	LT 0.0520	LT 0.1400
01/11/90	23713 23714	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.1200	0.7550	LT 0.0170	LT 0.1000	LT 0.0400	0.1200	LT 0.0520	0.4300
01/11/90	23715 23716	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.1400	0.9620	LT 0.0170	LT 0.1000	LT 0.0400	0.1100	LT 0.0520	0.5800
01/11/90	23717 23718	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.1000	0.7210	LT 0.0170	LT 0.1000	LT 0.0400	0.0930	LT 0.0520	0.4000

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
01/17/90	23722	23723	FC1	3.5200 a	LT 0.0300	LT 0.0240	0.1600	1.6500	LT 0.0420	2.9900	0.8110	1.1200 a	0.5870	LT 0.0330
01/17/90	23724	23725	FC2	3.5200 a	LT 0.0300	LT 0.0240	LT 0.0210	1.6900	0.1000	3.1700	0.8340	1.1400 a	1.6500	LT 0.0330
01/17/90	23726	23727	FC20	0.0900	LT 0.0300	LT 0.0240	LT 0.0210	0.0440	LT 0.0420	0.1600	LT 0.0450	0.2100	0.0380	LT 0.0330
01/17/90	23729	23730	FC3	3.2400 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4100	LT 0.0420	2.5400	0.9040 a	0.9840 a	0.3020 a	LT 0.0330
01/17/90	23732	23733	FC4	3.5200 a	LT 0.0300	LT 0.0240	LT 0.0210	1.3700	LT 0.0420	2.7300	0.8870 a	1.2700 a	0.2330 a	LT 0.0330
01/17/90	23735	23736	FC5	2.9500 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4700	LT 0.0420	2.5500	0.7510 a	0.9800 a	0.7610 a	LT 0.0330
01/23/90	23740	23741	FC1	0.8570 a	LT 0.0300	LT 0.0240	0.0810	0.5170	LT 0.0420	1.2900	0.7170 a	0.4160 a	0.0940 a	LT 0.0330
01/23/90	23742	23743	FC2	0.9020 a	LT 0.0300	LT 0.0240	0.0980	0.2600	LT 0.0420	1.0600	0.8230 a	0.3650 a	0.1610 a	LT 0.0330
01/23/90	23744	23745	FC3	1.0900 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7020	LT 0.0420	2.0100	0.8420 a	0.4900 b	0.1410 a	LT 0.0330
01/23/90	23746	23747	FC4	1.1800 a	LT 0.0300	LT 0.0240	LT 0.0210	1.0300	LT 0.0420	1.8900	0.9290 a	0.4410 b	0.1670 a	LT 0.0330
01/23/90	23748	23749	FC5	0.9320 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7760	LT 0.0420	1.7100	0.7590 a	0.3730 b	0.1220 a	LT 0.0330
01/29/90	23752	23753	FC1	0.9190 a	LT 0.0300	LT 0.0240	0.1100	0.3200	LT 0.0420	1.0000	0.6800	0.2500 b	0.3030	LT 0.0330
01/29/90	23754	23755	FC2	0.8470 a	LT 0.0300	LT 0.0240	0.0860	0.3300	LT 0.0420	0.8670	0.6280 a	0.2300 b	0.4140	LT 0.0330
01/29/90	23756	23757	FC20	0.8200 a	LT 0.0300	LT 0.0240	0.0850	0.3000	LT 0.0420	0.8700	0.6010	0.2000 b	0.3930	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT [illegible]lue Is [illegible] CRL; No [illegible] Available

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
01/17/90	23722	23723	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.4900	3.8000	0.2600	LT 0.1000	LT 0.0400	2.2100	0.1500	3.6200
01/17/90	23724	23725	FC2	LT 0.0380	LT 0.0450	LT 0.0470	1.3100	3.8900	LT 0.0170	LT 0.1000	LT 0.0400	2.5700	0.1500	3.7500
01/17/90	23726	23727	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.0400	0.2000	LT 0.0170	LT 0.1000	LT 0.0400	LT 0.0330	LT 0.0520	LT 0.1400
01/17/90	23729	23730	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.1300	2.7800	0.2600	LT 0.1000	LT 0.0400	1.9000	0.1200	2.8900
01/17/90	23732	23733	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.0300	3.5500	0.2100	LT 0.1000	LT 0.0400	1.9800	0.1300	3.6600
01/17/90	23735	23736	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.0800	3.2600	0.2300	LT 0.1000	LT 0.0400	2.1600	0.1500	3.1700
01/23/90	23740	23741	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.3650	1.6100	0.0690	LT 0.1000	LT 0.0400	0.3500	LT 0.0520	1.3700
01/23/90	23742	23743	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.2200	1.2100	LT 0.0170	LT 0.1000	LT 0.0400	0.3000	LT 0.0520	0.7800
01/23/90	23744	23745	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.5960	2.5600	LT 0.0170	LT 0.1000	LT 0.0400	0.5610	LT 0.0520	1.8600
01/23/90	23746	23747	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.7350	2.4300	LT 0.0170	LT 0.1000	LT 0.0400	0.5150	LT 0.0520	2.2800
01/23/90	23748	23749	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.5590	2.1400	LT 0.0170	LT 0.1000	LT 0.0400	0.3730	LT 0.0520	1.8300
01/29/90	23752	23753	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.2200	1.2000	LT 0.0170	LT 0.1000	LT 0.0400	0.2900	LT 0.0520	0.8930
01/29/90	23754	23755	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.2100	1.0800	0.0380	LT 0.1000	LT 0.0400	0.2800	LT 0.0520	0.7670
01/29/90	23756	23757	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.2000	1.0700	0.0370	LT 0.1000	LT 0.0400	0.2800	LT 0.0520	0.7220

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
01/29/90	23758	23759	FC3	0.9760 a	0.0600	0.0490	0.1500	0.4080	0.0710	0.8500	0.7520	0.3800 a	0.2060	0.0650
01/29/90	23760	23761	FC4	0.8550 a	LT 0.0300	LT 0.0240	0.0980	0.3400	LT 0.0420	1.2200	0.5990 a	0.2900 b	0.1910 a	LT 0.0330
01/29/90	23762	23763	FC5	0.8330 a	LT 0.0300	LT 0.0240	0.1800	0.4500	LT 0.0420	2.0300	0.8160	0.3100 b	0.4240	LT 0.0330
02/4/90	23766	23767	FC1	0.6410 b	LT 0.0300	LT 0.0240	0.1300 b	1.1000 b	LT 0.0420	1.7400 b	0.2300 b	0.4630 b	0.1100 b	LT 0.0330
02/4/90	23768	23769	FC2	1.2500 a	LT 0.0300	LT 0.0240	0.0880	0.8930	LT 0.0420	1.6800	0.6140 a	0.4640 b	0.6460	LT 0.0330
02/4/90	23770	23771	FC3	1.3300 a	LT 0.0300	LT 0.0240	0.1900	1.0500	LT 0.0420	2.1000	0.6560	0.5290 a	0.1950	LT 0.0330
02/4/90	23772	23773	FC4	1.3100 a	LT 0.0300	LT 0.0240	0.2200	0.9760	LT 0.0420	1.1200	0.6000	0.5830 a	0.1900	LT 0.0330
02/4/90	23774	23775	FC5	1.4000 a	LT 0.0300	LT 0.0240	0.1900	1.0700	LT 0.0420	2.2000	0.7300	0.4570 a	0.4680	LT 0.0330
02/10/90	23778	23779	FC1	0.5700 a	LT 0.0300	LT 0.0240	0.0460	0.1200	LT 0.0420	0.6050	0.5120 a	0.1700 b	0.0710 a	LT 0.0330
02/10/90	23780	23781	FC2	0.6000 a	LT 0.0300	LT 0.0240	0.0550	0.1600	LT 0.0420	0.6150	0.5890 a	0.1800 b	0.1240 a	LT 0.0330
02/10/90	23782	23783	FC2D	0.6000 a	LT 0.0300	LT 0.0240	0.0460	0.1700	LT 0.0420	0.6110	0.4500 a	0.1800 b	0.1360 a	LT 0.0330
02/10/90	23784	23785	FC3	0.6200 a	LT 0.0300	LT 0.0240	0.0530	0.1900	LT 0.0420	0.6990	0.5620 a	0.2630 a	0.0650 a	LT 0.0330
02/10/90	23786	23787	FC4	0.6240 a	LT 0.0300	LT 0.0240	0.0580	0.2200	LT 0.0420	0.7230	0.6670 a	0.2000 b	0.0670 a	LT 0.0330
02/10/90	23788	23789	FC5	0.5500 a	LT 0.0300	LT 0.0240	0.0470	0.1700	LT 0.0420	0.5930	0.5170 a	0.2400 a	0.0700 a	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
GT[redacted] Is A[redacted]; No E[redacted] Availa[redacted]

EBASCO SERVICES INCORPORATED — ROCKY MOUNTAIN ARSENAL PROGRAM — 04/05/91

ALL UNITS ARE IN UG/M3 — SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
01/29/90	23758 23759	FC3	0.1000	LT 0.0450	LT 0.0470	0.3100	1.0900	0.0640	0.1200	0.0570	0.4300	0.1100	0.9180
01/29/90	23760 23761	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.2100	1.1800	0.0420	LT 0.1000	LT 0.0400	0.3000	LT 0.0520	0.8520
01/29/90	23762 23763	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3300	2.2100	LT 0.0170	LT 0.1000	LT 0.0400	0.3300	LT 0.0520	1.4200
02/4/90	23766 23767	FC1	0.1000 b	LT 0.0450	LT 0.0470	0.7830 b	5.6900 b	0.1200 b	LT 0.1000	LT 0.0400	0.8190 b	0.1000 b	2.3500 b
02/4/90	23768 23769	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.6070	5.3200	0.0780	LT 0.1000	LT 0.0400	0.6790	0.0980	2.0000
02/4/90	23770 23771	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.7370	4.9100	0.1800	LT 0.1000	LT 0.0400	0.8770	0.1200	2.2100
02/4/90	23772 23773	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.7740	5.3900	0.2100	LT 0.1000	LT 0.0400	0.9760	0.1200	2.3200
02/4/90	23774 23775	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.7380	5.1700	0.2200	LT 0.1000	LT 0.0400	0.8120	0.1300	2.2900
02/10/90	23778 23779	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0900	0.5900	LT 0.0170	LT 0.1000	LT 0.0400	0.1900	LT 0.0520	0.3300
02/10/90	23780 23781	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.1200	0.6070	LT 0.0170	LT 0.1000	LT 0.0400	0.1900	LT 0.0520	0.4000
02/10/90	23782 23783	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.1100	0.5920	LT 0.0170	LT 0.1000	LT 0.0400	0.1800	LT 0.0520	0.4300
02/10/90	23784 23785	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.1400	0.7220	0.0190	LT 0.1000	LT 0.0400	0.2100	LT 0.0520	0.5200
02/10/90	23786 23787	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.1500	0.7620	0.0240	LT 0.1000	LT 0.0400	0.2100	LT 0.0520	0.5300
02/10/90	23788 23789	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.1100	0.5990	LT 0.0170	LT 0.1000	LT 0.0400	0.1700	LT 0.0520	0.4300

a - t/c weight).25t weight
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EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
02/16/90	23792	23793	FC1	1.4000 a	LT 0.0300	LT 0.0240	0.1800	1.5400	LT 0.0420	GT 0.3500	0.8520	0.6750 a	0.7360	LT 0.0330
02/16/90	23794	23795	FC2	1.5800 a	LT 0.0300	LT 0.0240	0.2200	1.6200	0.0940	2.2000	1.0400	0.5930 a	1.5100	LT 0.0330
02/16/90	23796	23797	FC3	GT 0.3500	LT 0.0300	LT 0.0240	0.2100	1.6000	LT 0.0420	1.0600	1.0900	0.6520 a	0.4650	LT 0.0330
02/16/90	23798	23799	FC4	2.4400 a	LT 0.0300	LT 0.0240	0.2000	1.5900	LT 0.0420	0.5470	0.9290	0.8120 a	0.3300	LT 0.0330
02/16/90	23800	23801	FC5	2.3000 a	LT 0.0300	LT 0.0240	0.1900	1.5100	LT 0.0420	GT 0.3500	0.9830	0.7460 a	1.0400	LT 0.0330
02/22/90	23804	23805	FC1	1.6200 a	LT 0.0300	LT 0.0240	0.1000	0.9660	LT 0.0420	1.4800	0.8440	0.4140 b	0.4940	LT 0.0330
02/22/90	23806	23807	FC2	1.7400 a	LT 0.0300	LT 0.0240	0.1200	1.2100	LT 0.0420	1.6400	0.8590	0.5110 a	0.9360	LT 0.0330
02/22/90	23808	23809	FC2D	1.7900 a	LT 0.0300	LT 0.0240	0.1300	1.1200	0.0570	0.2680 a	0.8770	0.4950 a	0.9400	LT 0.0330
02/22/90	23810	23811	FC3	2.0200 a	LT 0.0300	LT 0.0240	0.1400	1.1400	LT 0.0420	1.8500	0.9780	0.5050 b	0.4130	LT 0.0330
02/22/90	23812	23813	FC4	2.0300 a	LT 0.0300	LT 0.0240	0.1300	0.9300	LT 0.0420	1.7800	0.8880 a	0.5320 b	0.3110	LT 0.0330
02/22/90	23814	23815	FC5	1.7300 a	LT 0.0300	LT 0.0240	0.1100	0.9510	LT 0.0420	1.5400	0.8190	0.4930 b	0.6610	LT 0.0330
02/28/90	23818	23819	FC1	0.8440 a	LT 0.0300	LT 0.0240	0.1100	0.0850	LT 0.0420	0.8910	0.8620	0.2780 a	0.1970	LT 0.0330
02/28/90	23820	23821	FC2	0.8140 a	LT 0.0300	LT 0.0240	0.1100	0.0810	LT 0.0420	0.9160	0.8170	0.2180 a	0.3560	LT 0.0330
02/28/90	23822	23823	FC3	0.7950 a	LT 0.0300	LT 0.0240	0.1100	0.0890	LT 0.0420	0.9930	0.7890	0.2120 a	0.2410	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
[illegible]lue Is [illegible] CRL; N[illegible]te Avai[illegible]

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
02/16/90	23792 23793	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.2300	6.1900	0.1800	LT 0.1000	LT 0.0400	1.1400	0.1100	GT 0.6900
02/16/90	23794 23795	FC2	LT 0.0380	LT 0.0450	LT 0.0470	1.3000	2.1600	0.2200	LT 0.1000	LT 0.0400	6.3400	0.1200	GT 0.6900
02/16/90	23796 23797	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.2900	6.1700	0.2000	LT 0.1000	LT 0.0400	5.9800	0.1300	GT 0.6900
02/16/90	23798 23799	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.2300	6.2700	0.1900	LT 0.1000	LT 0.0400	1.2700	0.1000	4.2200
02/16/90	23800 23801	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.2600	GT 0.3500	0.1890	LT 0.1000	LT 0.0400	1.1100	0.1200	GT 0.6900
02/22/90	23804 23805	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.6900	5.6400	LT 0.0170	LT 0.1000	LT 0.0400	0.7240	0.1100	2.1400
02/22/90	23806 23807	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.8160	6.3800	0.1200	LT 0.1000	LT 0.0400	0.8160	0.1000	2.5900
02/22/90	23808 23809	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.7370	6.6700	0.1400	LT 0.1000	LT 0.0400	0.7370	0.0880	2.3900
02/22/90	23810 23811	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.9090	6.4000	0.1700	LT 0.1000	LT 0.0400	0.8420	0.1200	2.6900
02/22/90	23812 23813	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.6980	5.5100	0.1500	LT 0.1000	LT 0.0400	0.6980	0.0880	2.0600
02/22/90	23814 23815	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.7390	5.2800	0.1300	LT 0.1000	LT 0.0400	0.5990	0.0970	2.1500
02/28/90	23818 23819	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0930	0.5190	LT 0.0170	LT 0.1000	LT 0.0400	0.2600	LT 0.0520	0.2100
02/28/90	23820 23821	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0820	0.4470	LT 0.0170	LT 0.1000	LT 0.0400	0.2600	LT 0.0520	0.1700
02/28/90	23822 23823	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0800	0.4680	LT 0.0170	LT 0.1000	LT 0.0400	0.2500	LT 0.0520	0.1800

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
02/28/90	23824	23825	FC4	0.7350 a	LT 0.0300	LT 0.0240	0.0980	0.0920	LT 0.0420	0.7790	0.7990	0.2180 a	0.1590	LT 0.0330
02/28/90	23826	23827	FC5	0.9170 a	LT 0.0300	LT 0.0240	0.0950	0.0730	LT 0.0420	0.7770	0.8170	0.1800 b	0.1900	LT 0.0330
03/6/90	23830	23831	FC1	0.5500 a	LT 0.0300	LT 0.0240	0.0620	0.0980	LT 0.0420	0.5250 a	0.4850 a	0.3300 b	0.0510	LT 0.0330
03/6/90	23833	23834	FC2	0.5300 a	LT 0.0300	LT 0.0240	0.0560	0.0860	LT 0.0420	0.5460 a	0.4510	0.2800 b	0.0940 a	LT 0.0330
03/6/90	23836	23837	FC2D	0.5200 a	LT 0.0300	LT 0.0240	0.0530	0.0830	LT 0.0420	0.4520	0.4580	0.2000 b	0.0940 a	LT 0.0330
03/6/90	23839	23840	FC3	0.5400 a	LT 0.0300	LT 0.0240	0.0640	0.0940	LT 0.0420	0.5680 a	0.4510	0.2500 b	0.0720 a	LT 0.0330
03/6/90	23842	23843	FC4	0.3610	LT 0.0300	LT 0.0240	0.0590	0.1000	LT 0.0420	0.3610	0.3610	LT 0.0280	0.0480	LT 0.0330
03/6/90	23845	23846	FC5	0.7700 a	LT 0.0300	LT 0.0240	0.0580	0.0970	LT 0.0420	0.6890 a	0.5190 a	0.2800 b	0.1330 a	LT 0.0330
03/12/90	23851	23852	FC1	0.9940 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6940	LT 0.0420	0.4570 a	0.8140	0.3100 b	0.0960 a	LT 0.0330
03/12/90	23853	23854	FC2	1.1400	LT 0.0300	LT 0.0240	LT 0.0210	0.4900	LT 0.0420	1.5000	0.5450	0.2200 b	0.0950	LT 0.0330
03/12/90	23865	23866	FC2D	0.6710 a	LT 0.0300	LT 0.0240	0.0810	0.4610	LT 0.0420	1.4700	0.5450	0.2200 b	0.0900	LT 0.0330
03/12/90	23867	23868	FC2DL	LT 0.0610	LT 0.0300	LT 0.0240	LT 0.0210	LT 0.0280	LT 0.0420	2.8700	LT 0.0450	LT 0.0280	LT 0.0210	LT 0.0330
03/12/90	23863	23864	FC2L	1.4000	LT 0.0300	LT 0.0240	LT 0.0210	0.7200	LT 0.0420	2.6500	0.5700	0.3100	0.1800	LT 0.0330
03/12/90	23857	23858	FC4	0.9890 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6990	LT 0.0420	1.5200	0.7950	0.3000 b	0.0840 a	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
[redacted]ue Is [redacted]L; No [redacted]e Avai[redacted]

EBASCO SERVICES INCORPORATED　　ROCKY MOUNTAIN ARSENAL PROGRAM　　04/05/91

ALL UNITS ARE IN UG/M3　　SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	Dibromochloropropene	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
02/28/90	23824 23825	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0950	0.5250	LT 0.0170	LT 0.1000	LT 0.0400	0.2700	LT 0.0520	0.2000
02/28/90	23826 23827	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0730	0.3440	LT 0.0170	LT 0.1000	LT 0.0400	0.2300	LT 0.0520	0.1900
03/6/90	23830 23831	FC1	0.0970	LT 0.0450	LT 0.0470	0.0850	1.0600	LT 0.0170	LT 0.1000	LT 0.0400	0.1400	LT 0.0520	0.2500
03/6/90	23833 23834	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0810	1.1000	LT 0.0170	LT 0.1000	LT 0.0400	0.1100	LT 0.0520	0.2200
03/6/90	23836 23837	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.0710	1.1100	LT 0.0170	LT 0.1000	LT 0.0400	0.1100	LT 0.0520	0.1900
03/6/90	23839 23840	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0850	1.1000	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.2300
03/6/90	23842 23843	FC4	0.3100	LT 0.0450	LT 0.0470	0.0870	0.7220	LT 0.0170	LT 0.1000	LT 0.0400	0.1400	LT 0.0520	0.2500
03/6/90	23845 23846	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0880	1.1400	LT 0.0170	LT 0.1000	LT 0.0400	0.1400	LT 0.0520	0.2400
03/12/90	23851 23852	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.6940	3.4700	LT 0.0170	LT 0.1000	LT 0.0400	0.4700	LT 0.0520	0.6940
03/12/90	23853 23854	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.3800	4.1500	LT 0.0170	LT 0.1000	LT 0.0400	0.3700	LT 0.0520	1.3800
03/12/90	23865 23866	FC2D	0.3500 b	LT 0.0450	LT 0.0470	0.4610	4.1500	LT 0.0170	LT 0.1000	LT 0.0400	0.4300	LT 0.0520	0.4610
03/12/90	23867 23868	FC2DL	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	2.4000	LT 0.0170	LT 0.1000	LT 0.0400	LT 0.0330	LT 0.0520	LT 0.1400
03/12/90	23863 23864	FC2L	LT 0.0380	LT 0.0450	LT 0.0470	0.5000	2.3400	LT 0.0170	LT 0.1000	LT 0.0400	0.5000	LT 0.0520	1.8000
03/12/90	23857 23858	FC4	0.2400 a	LT 0.0450	LT 0.0470	0.6990	3.5000	LT 0.0170	LT 0.1000	LT 0.0400	0.4700	LT 0.0520	1.7500

a - t/c weight).25% weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
03/12/90	23859	23860	FC5	0.6360 a	LT 0.0300	LT 0.0240	0.1100	0.7120	LT 0.0420	1.1600	0.4420	0.2600 b	0.0870 a	LT 0.0330
03/18/90	23869	23870	FC1	0.6300 a	LT 0.0300	LT 0.0240	0.0660	0.0380	LT 0.0420	0.3920	0.8620	0.2560 a	0.1470 a	LT 0.0330
03/18/90	23872	23873	FC2	0.5300 a	LT 0.0300	LT 0.0240	0.0630	0.0460	LT 0.0420	0.4700 a	0.8290	0.1500 b	0.1230	LT 0.0330
03/18/90	23878	23879	FC3	0.1600 b	LT 0.0300	LT 0.0240	0.0800	0.0680	LT 0.0420	0.7550	0.4760 a	0.2050 a	0.1180	LT 0.0330
03/18/90	23881	23882	FC4	0.5600 a	LT 0.0300	LT 0.0240	0.0700	0.0610	LT 0.0420	0.4580 a	0.4780 a	0.6300 a	0.1090 a	LT 0.0330
03/18/90	23884	23885	FC5	0.6030 a	LT 0.0300	LT 0.0240	0.0800	0.0410	LT 0.0420	0.4730 a	0.8970 a	0.6300 a	0.1940 a	LT 0.0330
03/24/90	23890	23891	FC1	0.9110 a	LT 0.0300	LT 0.0240	0.1100	0.0730	LT 0.0420	0.7140	0.8210 a	0.4200 a	0.1100	LT 0.0330
03/24/90	23892	23893	FC2	0.9440 a	LT 0.0300	LT 0.0240	0.1200	0.0810	LT 0.0420	0.8440 a	0.8440 a	0.4900 a	0.1500	LT 0.0330
03/24/90	23900	23901	FC3	0.8480 a	LT 0.0300	LT 0.0240	0.1300	0.0940	LT 0.0420	0.8080	0.7880	0.3200 a	0.1300	LT 0.0330
03/24/90	23896	23897	FC4	0.8600 a	LT 0.0300	LT 0.0240	0.1200	0.0940	LT 0.0420	0.7730	0.8000	0.3900 a	0.1100	LT 0.0330
03/24/90	23898	23899	FC5	0.8410 a	LT 0.0300	LT 0.0240	0.1200	0.0860	LT 0.0420	0.7290	0.7810	0.2900 a	0.1300	LT 0.0330
04/5/90	23909	23910	FC1	1.4600 a	LT 0.0300	LT 0.0240	0.0990	0.1500	LT 0.0420	1.0400 a	1.1000 a	0.4480 a	0.1690 a	LT 0.0330
04/5/90	23911	23912	FC2	1.4100 a	LT 0.0300	LT 0.0240	0.0810	0.1300	LT 0.0420	1.0200 a	1.0600 a	0.4000 a	0.3000 a	LT 0.0330
04/5/90	23913	23914	FC3	1.4300 a	LT 0.0300	LT 0.0240	0.0910	0.1600	LT 0.0420	1.8500 a	1.1100 a	0.4800 a	0.1710 a	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
G[redacted]e Is [redacted]; No [redacted] Avail[redacted]

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
03/12/90	23859	23860	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3560	3.5600	LT 0.0170	LT 0.1000	LT 0.0400	0.4800	0.1000	1.7800
03/18/90	23869	23870	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0340	0.3560	LT 0.0170	LT 0.1000	LT 0.0400	0.1500	0.0610	LT 0.1400
03/18/90	23872	23873	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0410	0.4000	LT 0.0170	LT 0.1000	LT 0.0400	0.1200	LT 0.0520	LT 0.1400
03/18/90	23878	23879	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0580	0.3560	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.1900
03/18/90	23881	23882	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0520	0.3580	LT 0.0170	LT 0.1000	LT 0.0400	0.1200	LT 0.0520	0.1600
03/18/90	23884	23885	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0370	0.3900	LT 0.0170	LT 0.1000	LT 0.0400	0.1400	LT 0.0520	LT 0.1400
03/24/90	23890	23891	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0780	0.9770	LT 0.0170	LT 0.1000	LT 0.0400	0.1900	LT 0.0520	0.2300
03/24/90	23892	23893	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0830	1.3300	LT 0.0170	LT 0.1000	LT 0.0400	0.1600	LT 0.0520	0.2500
03/24/90	23900	23901	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0850	1.0200	LT 0.0170	LT 0.1000	LT 0.0400	0.1500	LT 0.0520	0.2700
03/24/90	23896	23897	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0850	1.0200	LT 0.0170	LT 0.1000	LT 0.0400	0.2000	LT 0.0520	0.2700
03/24/90	23898	23899	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0840	0.6710	LT 0.0170	LT 0.1000	LT 0.0400	0.1400	LT 0.0520	0.2400
04/5/90	23909	23910	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.1100	0.7300	LT 0.0170	LT 0.1000	LT 0.0400	0.3200	LT 0.0520	0.3400
04/5/90	23911	23912	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.1000	0.7040	LT 0.0170	LT 0.1000	LT 0.0400	0.3200	LT 0.0520	0.3200
04/5/90	23913	23914	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.1200	0.7410	LT 0.0170	LT 0.1000	LT 0.0400	0.3200	LT 0.0520	0.3700

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EBASCO SERVICES INCORPORATED

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
04/5/90	23915 23916	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0620	0.7020	LT 0.0170	LT 0.1000	LT 0.0400	0.2800	LT 0.0520	0.2000
04/5/90	23917 23918	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.1000	0.7460	LT 0.0170	LT 0.1000	LT 0.0400	0.3100	LT 0.0520	0.3400
04/11/90	23921 23922	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0750	0.8150	LT 0.0170	LT 0.1000	LT 0.0400	0.1900	LT 0.0520	0.2200
04/11/90	23924 23925	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0770	0.6430	LT 0.0170	LT 0.1000	LT 0.0400	0.2000	LT 0.0520	0.2400
04/11/90	23927 23928	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.0430	0.3700	LT 0.0170	LT 0.1000	LT 0.0400	0.1000	LT 0.0520	LT 0.1400
04/11/90	23930 23931	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0710	0.6510	LT 0.0170	LT 0.1000	LT 0.0400	0.1800	LT 0.0520	0.2100
04/11/90	23933 23934	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0770	0.6430	LT 0.0170	LT 0.1000	LT 0.0400	0.1900	LT 0.0520	0.2500
04/11/90	23936 23937	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0710	0.6490	LT 0.0170	LT 0.1000	LT 0.0400	0.1900	LT 0.0520	0.2000
04/18/90	23942 23943	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.6450	3.2300	LT 0.0170	LT 0.1000	LT 0.0400	0.6450	0.0780	1.6100
04/18/90	23944 23945	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.3180	3.1800	LT 0.0170	LT 0.1000	LT 0.0400	0.3180	0.0590	1.2700
04/18/90	23946 23947	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.3190 b	0.6390 b	LT 0.0170	LT 0.1000	LT 0.0400	0.6390 b	LT 0.0520	1.2800 b
04/18/90	23948 23949	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.3250	0.6490	LT 0.0170	LT 0.1000	LT 0.0400	0.6490	0.0570	1.3000
04/18/90	23950 23951	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3130	3.1300	LT 0.0170	LT 0.1000	LT 0.0400	0.3130	0.0610	1.2500
04/23/90	23954 23955	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.3580	3.5800	LT 0.0170	LT 0.1000	LT 0.0400	0.3580	LT 0.0520	1.4300

a - t/c weight).25t weight
b - Detected on t/c only
[illegible]lue Is [illegible]CRL; No [illegible]te Avai[illegible]

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
04/5/90	23915 23916	FC4	1.0300 a	LT 0.0300	LT 0.0240	0.0950	0.0570	LT 0.0420	1.0000 a	0.8720	0.3610 a	0.1400 a	LT 0.0330
04/5/90	23917 23918	FC5	1.4900 a	LT 0.0300	LT 0.0240	0.0950	0.1400	LT 0.0420	0.8660	1.0100 a	0.3800 a	0.2150 a	LT 0.0330
04/11/90	23921 23922	FC1	0.5730 a	LT 0.0300	LT 0.0240	0.0860	0.0890	LT 0.0420	0.6130 a	0.4530 a	0.4140 a	0.0930 a	LT 0.0330
04/11/90	23924 23925	FC2	0.5820 a	LT 0.0300	LT 0.0240	0.0960	0.1000	LT 0.0420	0.8630 a	0.7930	0.3250 a	0.1700 a	LT 0.0330
04/11/90	23927 23928	FC20	0.4410	LT 0.0300	LT 0.0240	0.0610	0.0510	LT 0.0420	0.9370 a	0.4040	0.2030 a	0.0910	LT 0.0330
04/11/90	23930 23931	FC3	0.5960 a	LT 0.0300	LT 0.0240	0.0960	0.0850	LT 0.0420	0.9770 a	0.4760 a	0.3610 a	0.0930 a	LT 0.0330
04/11/90	23933 23934	FC4	0.5720 a	LT 0.0300	LT 0.0240	0.0890	0.0960	LT 0.0420	0.8730 a	0.7830	0.3780 a	0.0900 a	LT 0.0330
04/11/90	23936 23937	FC5	0.6350 a	LT 0.0300	LT 0.0240	0.0990	0.0750	LT 0.0420	0.8390 a	0.4950 a	0.3820 a	0.1400 a	LT 0.0330
04/18/90	23942 23943	FC1	1.2900 a	LT 0.0300	LT 0.0240	0.1290 a	0.6450	LT 0.0420	1.9400 a	0.4930 a	0.3230 b	0.2060 a	LT 0.0330
04/18/90	23944 23945	FC2	0.9550 a	LT 0.0300	LT 0.0240	0.1320 a	0.3180	LT 0.0420	1.9100 a	0.4880 a	0.3950 a	0.2930 a	LT 0.0330
04/18/90	23946 23947	FC3	1.2800 a	LT 0.0300	LT 0.0240	0.1320 a	0.6390 b	LT 0.0420	1.6000 a	0.4790 a	0.3190	0.1460 a	LT 0.0330
04/18/90	23948 23949	FC4	0.9740 a	LT 0.0300	LT 0.0240	0.1480 a	0.6490	LT 0.0420	2.2700 a	0.4850 a	0.4500 b	0.1710 a	LT 0.0330
04/18/90	23950 23951	FC5	1.2500 a	LT 0.0300	LT 0.0240	0.1280 a	0.6250	LT 0.0420	1.4900	0.4930 a	0.3130 b	0.2620 a	LT 0.0330
04/23/90	23954 23955	FC1	1.0800 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7170	LT 0.0420	1.6500 a	0.3400 a	0.2800 b	0.0380 b	LT 0.0330

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EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
04/23/90	23957	23958	FC2	1.0600 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3700	LT 0.0420	1.4800 a	0.3000 a	0.2900 b	0.0400 b	LT 0.0330
04/23/90	23960	23961	FC2D	0.7960 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7970	LT 0.0420	1.5900 a	0.3500 a	0.3300 b	0.0410 b	LT 0.0330
04/23/90	23963	23964	FC3	1.1200 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7490	LT 0.0420	1.5000 a	0.3500 a	0.2600 b	LT 0.0210	LT 0.0330
04/23/90	23966	23967	FC4	1.4500 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7250	LT 0.0420	1.1000 a	0.3600 a	0.2800 b	LT 0.0210	LT 0.0330
04/23/90	23969	23970	FC5	1.4400 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7190	LT 0.0420	1.4400 a	0.3800 a	0.2900 b	0.0530 b	LT 0.0330
04/29/90	23975	23976	FC1	0.4720 a	LT 0.0300	LT 0.0240	0.0590	0.0690	LT 0.0420	0.4310	0.5710	0.0550 b	0.0660	LT 0.0330
04/29/90	23977	23978	FC2	0.5230 a	LT 0.0300	LT 0.0240	0.0550	0.0610	LT 0.0420	0.4140	0.4630 a	0.0600 b	0.0770	LT 0.0330
04/29/90	23979	23980	FC3	0.4790 a	LT 0.0300	LT 0.0240	0.0490	0.0670	LT 0.0420	0.4800 a	0.4370	LT 0.0280	0.0460	LT 0.0330
04/29/90	23981	23982	FC4	0.5990 a	LT 0.0300	LT 0.0240	0.0530	0.0670	LT 0.0420	0.5490 a	0.4990 a	0.1300 b	0.0460	LT 0.0330
04/29/90	23983	23984	FC5	0.5390 a	LT 0.0300	LT 0.0240	0.0610	0.0590	LT 0.0420	0.5300 a	0.4790 a	0.1000 b	0.0760	LT 0.0330
05/11/90	24010	24011	FC2	1.4100 a	LT 0.0300	LT 0.0240	0.1450 a	0.3890	LT 0.0420	1.4100 a	0.5520 a	0.3520 b	0.7040 a	0.0360
05/11/90	24012	24013	FC3	1.7300 a	LT 0.0300	LT 0.0240	0.1210 a	0.3470	LT 0.0420	1.0400 a	0.8640	0.4900 b	0.1770 a	LT 0.0330
05/11/90	24016	24017	FC5	1.7200 a	LT 0.0300	LT 0.0240	0.1350 a	0.3440	LT 0.0420	1.2700	0.9170 a	0.6870 b	0.6140 a	0.0350
05/17/90	24020	24021	FC1	1.0100 a	LT 0.0300	LT 0.0240	0.0870 a	0.0990	LT 0.0420	1.0600 a	0.3600 a	0.3100 b	0.0640 b	LT 0.0330

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GT - Value Is Above CRL; No Estimate Available

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field	Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
04/23/90	23957	23958	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.2800	3.5300	0.0810	LT 0.1000	LT 0.0400	0.3530	LT 0.0520	1.0600
04/23/90	23960	23961	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.3980	3.9800	LT 0.0170	LT 0.1000	LT 0.0400	0.3980	LT 0.0520	1.5900
04/23/90	23963	23964	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.3750	3.3700	LT 0.0170	LT 0.1000	LT 0.0400	0.3750	LT 0.0520	1.5000
04/23/90	23966	23967	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.3620	0.3620	LT 0.0170	LT 0.1000	LT 0.0400	0.3620	LT 0.0520	1.4500
04/23/90	23969	23970	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3600	3.6000	LT 0.0170	LT 0.1000	LT 0.0400	0.3600	0.1400	1.4400
04/29/90	23975	23976	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0410	0.4300	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.1500
04/29/90	23977	23978	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0410	0.4200	LT 0.0170	LT 0.1000	LT 0.0400	0.1200	LT 0.0520	0.1500
04/29/90	23979	23980	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0390	0.3700	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.1400
04/29/90	23981	23982	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0430	0.4200	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.1700
04/29/90	23983	23984	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0430	0.3900	LT 0.0170	LT 0.1000	LT 0.0400	0.1200	LT 0.0520	0.1500
05/11/90	24010	24011	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.3000	3.0100	LT 0.0170	LT 0.1000	LT 0.0400	0.3520	0.0650	1.0600
05/11/90	24012	24013	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.2900	2.4300	LT 0.0170	LT 0.1000	LT 0.0400	0.4700	LT 0.0520	0.6940
05/11/90	24016	24017	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3200	3.0900	LT 0.0170	LT 0.1000	LT 0.0400	0.3440	0.2100	1.0300
05/17/90	24020	24021	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0990	2.0300	0.0330	LT 0.1000	LT 0.0400	0.3380	LT 0.0520	0.3000

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ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
05/17/90	24023	24024	FC2	0.6760 a	LT 0.0300	LT 0.0240	0.0790 a	0.2800	LT 0.0420	0.8460 a	0.3300 a	0.2400 b	0.0970 a	LT 0.0330
05/17/90	24026	24027	FC20	1.5500 a	LT 0.0300	LT 0.0240	0.1100	0.3880	LT 0.0420	1.2700	0.5380 a	0.2400 b	0.1730 a	LT 0.0330
05/17/90	24029	24033	FC3	1.7400	LT 0.0300	LT 0.0240	0.1400	0.0320	LT 0.0420	1.8400	0.7990	0.2800 b	0.0990 a	LT 0.0330
05/17/90	24030	24032	FC4	1.0400 a	LT 0.0300	LT 0.0240	0.0710 b	0.3420 b	LT 0.0420	0.7850 a	0.4820 a	0.2500	0.0720 a	LT 0.0330
05/17/90	24035	24036	FC5	2.0800 a	LT 0.0300	LT 0.0240	0.1350 a	0.6940	LT 0.0420	1.2000	0.7540	0.8400 b	0.1360 a	LT 0.0330
05/23/90	24041	24042	FC1	0.9880 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6780	LT 0.0420	0.7760 a	0.1810 a	0.3390 b	0.0740 b	LT 0.0330
05/23/90	24043	24044	FC2	0.9900 a	LT 0.0300	LT 0.0240	LT 0.0210	0.5050 a	LT 0.0420	0.6900 a	0.1810 a	0.3450 b	0.1200 b	LT 0.0330
05/23/90	24045	24046	FC3	0.7510 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3610	LT 0.0420	1.0800 a	0.2200 a	0.4800 b	0.0290 b	LT 0.0330
05/23/90	24047	24048	FC4	1.0600 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7040	LT 0.0420	0.9040 a	0.2200 a	0.3520 b	0.0260 b	LT 0.0330
05/23/90	24049	24050	FC5	0.7410 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3800	LT 0.0420	1.0000 a	0.2030 a	0.4700 b	0.0880 b	LT 0.0330
05/29/90	24053	24054	FC1	1.3600 a	LT 0.0300	LT 0.0240	0.0360	0.2200	LT 0.0420	1.0200 a	0.5000 a	0.4180 a	0.4700 a	0.0520
05/29/90	24056	24057	FC2	1.3700 a	LT 0.0300	LT 0.0240	0.0950 a	0.2000	LT 0.0420	0.8770 a	0.5440 a	0.4770 a	0.1000 a	0.0450
05/29/90	24059	24060	FC20	1.1700 a	LT 0.0300	LT 0.0240	0.0760 a	0.1800	LT 0.0420	0.6490 a	0.6290 a	0.4300 a	0.3240 a	0.0400
05/29/90	24062	24063	FC3	0.7500 a	LT 0.0300	LT 0.0240	0.0690 a	0.1600	LT 0.0420	0.6350 a	0.4900 a	0.3630 a	0.0950 b	0.0370

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
05/17/90	24023 24024	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.2000	2.0300	LT 0.0170	LT 0.1000	LT 0.0400	0.3380	LT 0.0520	0.6760
05/17/90	24026 24027	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.3880	3.8800	LT 0.0170	LT 0.1000	LT 0.0400	0.3880	LT 0.0520	1.1600
05/17/90	24029 24033	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0340	2.1000	LT 0.0170	LT 0.1000	LT 0.0400	0.2400	0.0610	LT 0.1400
05/17/90	24030 24032	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.2600 b	2.0900 b	LT 0.0170	LT 0.1000	LT 0.0400	0.4200 b	LT 0.0520	0.6850 b
05/17/90	24035 24036	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3470	3.4700	LT 0.0170	LT 0.1000	LT 0.0400	0.6940	0.0980	1.0400
05/23/90	24041 24042	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.3390	6.7800	LT 0.0170	LT 0.1000	LT 0.0400	0.4600	LT 0.0520	1.3600
05/23/90	24043 24044	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.3700 a	3.7900 a	LT 0.0170	LT 0.1000	LT 0.0400	3.6100	LT 0.0520	4.1400 a
05/23/90	24045 24046	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.2800	3.6100	0.0840	LT 0.1000	LT 0.0400	0.4000	LT 0.0520	1.0800
05/23/90	24047 24048	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.3520	7.0400	LT 0.0170	LT 0.1000	LT 0.0400	0.4800	LT 0.0520	1.4100
05/23/90	24049 24050	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.2700	3.8100	LT 0.0170	LT 0.1000	LT 0.0400	0.4400	0.0890 b	1.0800
05/29/90	24053 24054	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.1700	1.0200	LT 0.0170	LT 0.1000	LT 0.0400	0.3390	LT 0.0520	0.6780
05/29/90	24056 24057	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.1300	1.0300	LT 0.0170	LT 0.1000	LT 0.0400	0.3440	LT 0.0520	0.3440
05/29/90	24059 24060	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.1500	1.1700	LT 0.0170	LT 0.1000	LT 0.0400	0.5400	LT 0.0520	0.3890
05/29/90	24062 24063	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.1200	0.7490	LT 0.0170	LT 0.1000	LT 0.0400	0.3700	LT 0.0520	0.3750

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
05/29/90	24065	24066	FC4	1.0500 a	LT 0.0300	LT 0.0240	0.0850 a	0.1800	LT 0.0420	1.0500 a	0.5000 a	0.5160 a	0.1170 a	0.0400
05/29/90	24068	24069	FC5	1.0700 a	LT 0.0300	LT 0.0240	0.0990 a	0.0800	LT 0.0420	0.6760 a	0.5000 a	0.4600 a	0.2960 a	LT 0.0330
06/10/90	24092	24093	FC1	0.3400 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1400	LT 0.0420	0.5250 a	0.1900 a	LT 0.0280	LT 0.0210	LT 0.0330
06/10/90	24095	24096	FC2	0.3600 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1900	LT 0.0420	0.5500 a	0.2080 a	LT 0.0280	0.0270 b	LT 0.0330
06/10/90	24098	24099	FC20	0.4500 a	LT 0.0300	LT 0.0240	LT 0.0210	0.2100	LT 0.0420	0.5500 a	0.2600 a	0.0600 b	0.0380 b	LT 0.0330
06/10/90	24101	24102	FC3	0.3800 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1600	LT 0.0420	0.5800 a	0.2030 a	0.0460 b	LT 0.0210	LT 0.0330
06/10/90	24104	24105	FC4	0.4000 a	LT 0.0300	LT 0.0240	LT 0.0210	0.0660	LT 0.0420	0.4400 a	0.2300 a	0.0580 b	LT 0.0210	LT 0.0330
06/10/90	24107	24108	FC5	0.3300 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1100	LT 0.0420	0.3200 a	0.1780 a	LT 0.0280	LT 0.0210	LT 0.0330
06/16/90	24113	24114	FC1	0.5800 a	LT 0.0300	LT 0.0240	0.0440 b	0.0950	LT 0.0420	1.0500 a	0.3100 a	0.1600 b	0.2200 b	LT 0.0330
06/16/90	24115	24116	FC2	0.5200 a	LT 0.0300	LT 0.0240	0.0620 b	0.0760	LT 0.0420	0.9690 a	0.3300 a	0.1600 b	0.6990 b	LT 0.0330
06/16/90	24117	24118	FC3	0.6000 a	LT 0.0300	LT 0.0240	0.0550 b	0.0940	LT 0.0420	1.0700 a	0.3300 a	0.1800 b	0.2000 b	LT 0.0330
06/16/90	24119	24120	FC4	0.6000 a	LT 0.0300	LT 0.0240	0.0400 b	0.1200	LT 0.0420	0.7060 a	0.3400 a	0.1700 b	0.1500 b	LT 0.0330
06/16/90	24121	24122	FC5	0.6000 a	LT 0.0300	LT 0.0240	0.0460 b	0.1100	LT 0.0420	1.0400 a	0.3300 a	0.1700 b	0.2900 b	LT 0.0330
06/22/90	24125	24126	FC1	0.7500 a	LT 0.0300	LT 0.0240	0.0680 a	0.3600	LT 0.0420	0.8340 a	0.3200 a	0.1500 b	0.0950 b	LT 0.0330

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
05/29/90	24065 24066	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.1400	1.0500	LT 0.0170	LT 0.1000	LT 0.0400	0.4900	LT 0.0520	0.3480
05/29/90	24068 24069	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0720	0.7120	LT 0.0170	LT 0.1000	LT 0.0400	0.4700	LT 0.0520	0.2200
06/10/90	24092 24093	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.1100	0.7090	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.3200
06/10/90	24095 24096	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.1400	0.6870	LT 0.0170	LT 0.1000	LT 0.0400	0.1600	LT 0.0520	0.3440
06/10/90	24098 24099	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.1600	0.8470	LT 0.0170	LT 0.1000	LT 0.0400	0.1800	LT 0.0520	0.4240
06/10/90	24101 24102	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.1200	0.7040	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.3520
06/10/90	24104 24105	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0600	0.3370	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.1800
06/10/90	24107 24108	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0730	0.3390	0.0380	LT 0.1000	LT 0.0400	0.1700	LT 0.0520	0.2400
06/16/90	24113 24114	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0650	0.6990	LT 0.0170	LT 0.1000	LT 0.0400	0.1600	LT 0.0520	0.2100
06/16/90	24115 24116	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0550	0.3500	LT 0.0170	LT 0.1000	LT 0.0400	0.2000	LT 0.0520	0.1900
06/16/90	24117 24118	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0590	0.3730	LT 0.0170	LT 0.1000	LT 0.0400	0.1600	LT 0.0520	0.2000
06/16/90	24119 24120	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0820	0.3460	LT 0.0170	LT 0.1000	LT 0.0400	0.1600	LT 0.0520	0.2500
06/16/90	24121 24122	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0860	0.7300	LT 0.0170	LT 0.1000	LT 0.0400	0.1500	LT 0.0520	0.2700
06/22/90	24125 24126	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.2600	8.3300	LT 0.0170	LT 0.1000	LT 0.0400	0.3900	LT 0.0520	0.8330

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
06/22/90	24128	24129	FC2	0.7600 a	LT 0.0300	LT 0.0240	0.0680 a	0.3300	LT 0.0420	0.8160 a	0.3000 a	0.1500 b	0.0820 b	LT 0.0330
06/22/90	24131	24132	FC20	0.5900 a	LT 0.0300	LT 0.0240	0.0320 b	0.3000	LT 0.0420	0.7040 a	0.2400 a	0.1460 a	0.0700 b	LT 0.0330
06/22/90	24134	24135	FC3	0.6800 a	LT 0.0300	LT 0.0240	0.0800 a	0.3400 b	LT 0.0420	1.0100 a	0.2700 a	0.2000	0.0460	LT 0.0330
06/22/90	24137	24138	FC4	0.6300 a	LT 0.0300	LT 0.0240	0.0600 a	0.3500	LT 0.0420	0.6780 a	0.2600 a	0.1600 b	0.0340 b	LT 0.0330
06/22/90	24140	24141	FC5	0.5700 a	LT 0.0300	LT 0.0240	0.0250 b	0.2700	LT 0.0420	0.6320 a	0.2220 a	0.1300 b	0.0510 b	LT 0.0330
06/28/90	24146	24147	FC1	0.4560 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6710	LT 0.0420	0.3780 a	0.1270 a	0.6710 b	0.0960 b	LT 0.0330
06/28/90	24148	24149	FC2	0.4830 a	LT 0.0300	LT 0.0240	0.0400 b	0.7070	LT 0.0420	0.3570 a	0.1190 a	0.4900 b	0.7070 b	LT 0.0330
06/28/90	24150	24151	FC3	0.4710 a	LT 0.0300	LT 0.0240	0.0220 b	0.3410	LT 0.0420	0.3790 a	0.1380 a	0.4400 b	0.0850 b	LT 0.0330
06/28/90	24152	24153	FC4	0.4720 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6640	LT 0.0420	0.7140 a	0.1230 a	0.3320 b	0.0760 b	LT 0.0330
06/28/90	24154	24155	FC5	0.4800 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6970	LT 0.0420	0.3490 a	0.1010 a	0.3480 b	0.0740 b	LT 0.0330
07/4/90	24158	24159	FC1	0.5200 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3300	LT 0.0420	0.4180 a	0.2100 a	0.1100 b	0.0880 b	LT 0.0330
07/4/90	24161	24162	FC2	0.1600	LT 0.0300	LT 0.0240	LT 0.0210	0.3300	LT 0.0420	0.1770 a	0.1100	LT 0.0280	LT 0.0210	LT 0.0330
07/4/90	24164	24165	FC20	0.5100 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3600	LT 0.0420	1.1100 a	0.2200 a	0.1000 b	0.2300 b	LT 0.0330
07/4/90	24167	24168	FC3	0.5500 a	LT 0.0300	LT 0.0240	0.0280 b	0.3500	LT 0.0420	0.6850 a	0.2300 a	0.1300 b	0.1100 b	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
G[redacted]e Is A[redacted]L; No [redacted] Avail[redacted]

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
06/22/90	24128 24129	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.2400	8.3300	LT 0.0170	LT 0.1000	LT 0.0400	0.3800	LT 0.0520	0.8160
06/22/90	24131 24132	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.2200	3.8700	LT 0.0170	LT 0.1000	LT 0.0400	0.3400	LT 0.0520	0.7040
06/22/90	24134 24135	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.2500 b	6.9500 a	0.0920 b	LT 0.1000	LT 0.0400	0.3300 b	LT 0.0520	0.6760 b
06/22/90	24137 24138	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.2500	6.7800	0.1100	LT 0.1000	LT 0.0400	0.3200	LT 0.0520	0.6780
06/22/90	24140 24141	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.2000	3.5200	LT 0.0170	LT 0.1000	LT 0.0400	0.3300	LT 0.0520	0.7040
06/28/90	24146 24147	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.3360	6.8400	0.1800	LT 0.1000	LT 0.0400	1.0600	LT 0.0520	1.3400
06/28/90	24148 24149	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.3530	7.2400	LT 0.0170	LT 0.1000	LT 0.0400	1.1400	LT 0.0520	1.4100
06/28/90	24150 24151	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.3410	7.0600	LT 0.0170	LT 0.1000	LT 0.0400	1.0900	LT 0.0520	1.3700
06/28/90	24152 24153	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.3320	6.8700	0.2200	LT 0.1000	LT 0.0400	1.0800	LT 0.0520	1.3300
06/28/90	24154 24155	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3480	7.1400	LT 0.0170	LT 0.1000	LT 0.0400	1.1400	0.0780 b	1.3900
07/6/90	24158 24159	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.2300	1.8500	0.0640	LT 0.1000	LT 0.0400	0.3800	LT 0.0520	0.6920
07/6/90	24161 24162	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.2400	1.0700	0.0920	LT 0.1000	LT 0.0400	0.4800	LT 0.0520	0.7120
07/6/90	24164 24165	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.2500	1.8400	0.1100	LT 0.1000	LT 0.0400	0.4900	LT 0.0520	0.7350
07/6/90	24167 24168	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.2500	2.0700	LT 0.0170	LT 0.1000	LT 0.0400	0.3800	LT 0.0520	0.6900

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
07/4/90	24170	24171	FC4	0.5060 a	LT 0.0300	LT 0.0240	0.0390 b	0.3360	LT 0.0420	0.7650 a	0.2100 a	0.1200 b	0.0820 b	LT 0.0330
07/4/90	24173	24174	FC5	0.4900 a	LT 0.0300	LT 0.0240	0.0260 b	0.3790	LT 0.0420	0.4760 a	0.2000 a	0.1100 b	0.0880 b	LT 0.0330
07/10/90	24179	24180	FC1	3.7100 a	LT 0.0300	LT 0.0240	LT 0.0210	1.3900	LT 0.0420	2.7100 a	0.3200 a	0.6760 b	0.3100 b	LT 0.0330
07/10/90	24181	24182	FC2	2.4400 a	LT 0.0300	LT 0.0240	0.1600 b	1.4200	LT 0.0420	2.4400 a	0.2900 a	0.6970 b	0.6970 b	LT 0.0330
07/10/90	24183	24184	FC3	4.3400 a	LT 0.0300	LT 0.0240	0.1700 b	1.3400	LT 0.0420	2.6700 a	0.3400 a	0.6690 b	0.3340 b	LT 0.0330
07/10/90	24185	24186	FC4	4.3000 a	LT 0.0300	LT 0.0240	0.1480 a	1.3200	LT 0.0420	2.6500 a	0.3000 a	0.6620 b	0.2200 b	LT 0.0330
07/10/90	24187	24188	FC5	2.2900 a	LT 0.0300	LT 0.0240	LT 0.0210	0.9800	LT 0.0420	2.1300 a	0.2600 a	0.3270 b	0.3300 b	LT 0.0330
07/16/90	24191	24192	FC1	0.5910 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7020	LT 0.0420	0.8920 a	0.1830 a	0.2700 b	0.0770 b	LT 0.0330
07/16/90	24194	24195	FC2	0.5400 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7740	LT 0.0420	0.8690 a	0.1770 a	0.2400 b	0.2100 b	LT 0.0330
07/16/90	24197	24198	FC20	0.5820 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7040 b	LT 0.0420	0.7940	0.1870 a	0.2400	0.2000	LT 0.0330
07/16/90	24200	24201	FC3	0.5700 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6800	LT 0.0420	0.7670 a	0.1840 a	0.2200 b	0.0270 b	LT 0.0330
07/16/90	24203	24204	FC4	0.6080 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7080	LT 0.0420	1.0100 a	0.1920 a	0.2400 b	0.0230 b	LT 0.0330
07/16/90	24206	24207	FC5	1.0300 a	LT 0.0300	LT 0.0240	LT 0.0210	0.8030	LT 0.0420	0.8790 a	0.2570 a	0.4200 b	0.1200 b	LT 0.0330
07/22/90	24212	24213	FC1	0.5180 a	LT 0.0300	LT 0.0240	0.0750 b	0.0680	LT 0.0420	0.7860 a	0.3800 a	0.1600 b	0.6560 b	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
[illegible]lue Is[illegible]CRL; No[illegible]te Avai[illegible]

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
07/4/90	24170	24171	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.2900	2.4700	0.1000	LT 0.1000	LT 0.0400	0.4100	LT 0.0520	1.0100
07/4/90	24173	24174	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.2580	1.0400 a	0.1200 a	LT 0.1000	LT 0.0400	0.4400 a	LT 0.0520	0.8000
07/10/90	24179	24180	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.0400	6.9700	0.2700	LT 0.1000	LT 0.0400	0.6760	0.0590 b	1.6900
07/10/90	24181	24182	FC2	LT 0.0380	LT 0.0450	LT 0.0470	1.0500	10.800	0.2900	LT 0.1000	LT 0.0400	0.6970	LT 0.0520	2.0900
07/10/90	24183	24164	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.0300	6.6900	0.2500	LT 0.1000	LT 0.0400	0.6690	LT 0.0520	0.6690
07/10/90	24185	24186	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.0700	7.2800	0.1800	LT 0.1000	LT 0.0400	0.8520 a	LT 0.0520	1.6600
07/10/90	24187	24188	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.9800	6.5400	0.1600	LT 0.1000	LT 0.0400	0.6540	0.0880 b	2.6100
07/16/90	24191	24192	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.7020	3.5100	0.2200	LT 0.1000	LT 0.0400	0.7020	LT 0.0520	1.7500
07/16/90	24194	24195	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.3990	3.8400	0.1100	LT 0.1000	LT 0.0400	0.7930	LT 0.0520	1.0800
07/16/90	24197	24198	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.3520 b	3.5200 b	0.1300 b	LT 0.1000	LT 0.0400	0.7040 b	LT 0.0520	1.4100 b
07/16/90	24200	24201	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.3400	3.4000	0.1500	LT 0.1000	LT 0.0400	0.6800	LT 0.0520	1.3600
07/16/90	24203	24204	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.6760	4.0600	0.1300	LT 0.1000	LT 0.0400	0.5880 a	LT 0.0520	1.3500
07/16/90	24206	24207	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.4020	4.0200	0.1700	LT 0.1000	LT 0.0400	0.8030	0.2000 b	1.6100
07/22/90	24212	24213	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0510	0.3800	LT 0.0170	LT 0.1000	LT 0.0400	0.1500	LT 0.0520	0.1600

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EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
07/22/90	24214 24215	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0430	0.3600	LT 0.0170	LT 0.1000	LT 0.0400	0.1300	LT 0.0520	0.1400
07/22/90	24216 24217	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.0460	0.3190	LT 0.0170	LT 0.1000	LT 0.0400	0.1100	LT 0.0520	0.1500
07/22/90	24218 24219	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0440	0.3800	LT 0.0170	LT 0.1000	LT 0.0400	0.1100	LT 0.0520	0.1400
07/22/90	24220 24221	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.0460	0.3900	LT 0.0170	LT 0.1000	LT 0.0400	0.1400	LT 0.0520	0.1400
07/28/90	24224 24225	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.3200	2.7100	0.0750	LT 0.1000	LT 0.0400	0.4300	LT 0.0520	1.0200
07/28/90	24227 24228	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.3000	2.6000	0.0990 a	LT 0.1000	LT 0.0400	0.3440	LT 0.0520	1.0300
07/28/90	24230 24231	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.3100	2.6400	LT 0.0170	LT 0.1000	LT 0.0400	0.3300	LT 0.0520	0.9900
07/28/90	24233 24234	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.3390	3.0500	LT 0.0170	LT 0.1000	LT 0.0400	0.4400	LT 0.0520	1.0200
07/28/90	24236 24237	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.3190	3.1900	0.0300	LT 0.1000	LT 0.0400	0.4300	LT 0.0520	0.9580
07/28/90	24239 24240	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3330	3.4600	0.0610 a	LT 0.1000	LT 0.0400	0.3330	LT 0.0520	1.0000
08/3/90	24245 24246	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.0300	10.300	LT 0.0170	LT 0.1000	LT 0.0400	1.7200	0.0710 b	6.8700
08/3/90	24247 24248	FC2	LT 0.0380	LT 0.0450	LT 0.0470	1.0400	10.400	0.1900	LT 0.1000	LT 0.0400	2.0800	LT 0.0520	6.9400
08/3/90	24249 24250	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.7270	10.900	0.1900	LT 0.1000	LT 0.0400	1.8200	LT 0.0520	3.6400
08/3/90	24251 24252	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.3000	9.7700	LT 0.0170	LT 0.1000	LT 0.0400	1.9500	LT 0.0520	6.5100

a - t/c weight).25t weight
b - Detected on t/c only
[redacted]lue I[redacted]CRL; N[redacted]te Av[redacted]

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
07/22/90	24214	24215	FC2	0.5160 a	LT 0.0300	LT 0.0240	0.0640 b	0.0590	LT 0.0420	0.4900 a	0.3400 a	0.1800 b	0.3360 b	LT 0.0330
07/22/90	24216	24217	FC3	0.5190 a	LT 0.0300	LT 0.0240	0.0830 b	0.0650	LT 0.0420	1.2000 a	0.3600 a	0.2000 b	0.2300 b	LT 0.0330
07/22/90	24218	24219	FC4	0.5040 a	LT 0.0300	LT 0.0240	0.0660 b	0.0580	LT 0.0420	0.7490 a	0.3800 a	0.1500 b	0.2000 b	LT 0.0330
07/22/90	24220	24221	FC5	0.5130 a	LT 0.0300	LT 0.0240	0.0760 b	0.0620	LT 0.0420	0.4330 a	0.3200 a	0.2000 b	0.3230 b	LT 0.0330
07/28/90	24224	24225	FC1	0.6090 a	LT 0.0300	LT 0.0240	0.0460 b	0.3390	LT 0.0420	0.9380 a	0.2500 a	0.3000 b	0.0820 b	LT 0.0330
07/28/90	24227	24228	FC2	0.6040 a	LT 0.0300	LT 0.0240	0.0710 b	0.3440	LT 0.0420	0.9670 a	0.2400 a	0.2700 b	0.3000 b	LT 0.0330
07/28/90	24230	24231	FC20	0.5900 a	LT 0.0300	LT 0.0240	0.0650 b	0.3300	LT 0.0420	0.9400 a	0.2400 a	0.2900 b	0.3200 b	LT 0.0330
07/28/90	24233	24234	FC3	0.6590 a	LT 0.0300	LT 0.0240	0.0420 b	0.3390	LT 0.0420	0.6780 a	0.2500 a	0.2600 b	0.0320 b	LT 0.0330
07/28/90	24236	24237	FC4	0.5990 a	LT 0.0300	LT 0.0240	0.0750 a	0.6390	LT 0.0420	0.9580 a	0.2600 a	0.4150 a	0.0800 b	LT 0.0330
07/28/90	24239	24240	FC5	0.6130 a	LT 0.0300	LT 0.0240	0.0440 b	0.6670	LT 0.0420	0.9770 a	0.2270 a	0.2700 b	0.0790 b	LT 0.0330
08/3/90	24245	24246	FC1	1.7100 a	LT 0.0300	LT 0.0240	LT 0.0210	1.7200	LT 0.0420	2.7500 a	0.3100 a	0.2700 b	0.1400 b	LT 0.0330
08/3/90	24247	24248	FC2	1.3900 a	LT 0.0300	LT 0.0240	0.0470 b	1.7400	LT 0.0420	1.7300 a	0.2900 a	0.3000 b	0.3540 a	LT 0.0330
08/3/90	24249	24250	FC3	2.1800 a	LT 0.0300	LT 0.0240	LT 0.0210	1.0900	LT 0.0420	3.2700 a	0.3600 a	0.3200 b	0.0840 b	LT 0.0330
08/3/90	24251	24252	FC4	1.9500 a	LT 0.0300	LT 0.0240	LT 0.0210	2.2800	LT 0.0420	2.6100 a	0.3300 a	0.3500 b	0.0960 b	LT 0.0330

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EBASCO SERVICES INCORPORATED — ROCKY MOUNTAIN ARSENAL PROGRAM — 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample	Number	Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
08/3/90	24253	24254	FC5	1.0600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.7700	LT 0.0420	1.7700 a	0.2280 a	0.2400 b	0.0550 b	LT 0.0330
08/9/90	24257	24258	FC1	1.4200 a	LT 0.0300	LT 0.0240	LT 0.0210	0.2600	LT 0.0420	2.4500 a	0.2900 a	0.6990 b	0.2900 b	LT 0.0330
08/9/90	24260	24261	FC2	1.4300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.0900	LT 0.0420	1.6600 a	0.2500 a	0.3480 b	1.0500 b	LT 0.0330
08/9/90	24263	24264	FC20	1.4100 a	LT 0.0300	LT 0.0240	LT 0.0210	2.4600	0.0500	2.4100 a	0.2800 a	0.7040 b	1.4100 b	LT 0.0330
08/9/90	24266	24267	FC3	1.0400 a	LT 0.0300	LT 0.0240	LT 0.0210	2.4300	LT 0.0420	2.0900 a	0.3000 a	0.3470 b	LT 0.0210	LT 0.0330
08/9/90	24270	24271	FC5	1.0300 a	LT 0.0300	LT 0.0240	LT 0.0210	2.0600	LT 0.0420	1.1900 a	0.2800 a	0.3440 b	0.3440 b	LT 0.0330
08/15/90	24276	24277	FC1	0.6820 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3600	LT 0.0420	0.9730 a	0.3600 a	0.3400 b	0.3300 b	LT 0.0330
08/15/90	24278	24279	FC2	0.7060 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3300	LT 0.0420	0.9010 a	0.3500 a	0.1400 b	0.6300 a	LT 0.0330
08/15/90	24280	24281	FC3	0.7020 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3400	LT 0.0420	0.8450	0.3600 a	0.2200 b	0.1200 b	LT 0.0330
08/15/90	24282	24283	FC4	0.6710 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3210	LT 0.0420	0.5000 a	0.3000 a	0.1400 b	0.1800 b	LT 0.0330
08/15/90	24284	24285	FC5	0.6900 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3500	LT 0.0420	0.5200 a	0.3300 a	0.2400 a	0.2900 b	LT 0.0330
08/22/90	24295	24296	FC1	2.1600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4400	LT 0.0420	0.7220 a	0.2800 a	0.3610 b	0.1700 b	LT 0.0330
08/22/90	24299	24300	FC20	1.8600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4900	0.0580	0.7420 a	0.2600 a	0.5000 b	0.3200 b	LT 0.0330
08/22/90	24301	24302	FC3	1.7700 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4200	LT 0.0420	0.9390 a	0.2400 a	0.4200 b	0.0990 b	LT 0.0330

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ALL UNITS ARE IN UG/M3　　SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
08/3/90	24253 24254	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.0600	10.600	0.1400	LT 0.1000	LT 0.0400	1.7700	0.0610 b	7.0700
08/9/90	24257 24258	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.2600	10.500	0.1800	LT 0.1000	LT 0.0400	0.6990	LT 0.0520	1.4000
08/9/90	24260 24261	FC2	LT 0.0380	LT 0.0450	LT 0.0470	1.3900	10.500	0.1800	LT 0.1000	LT 0.0400	1.0500	LT 0.0520	6.9700
08/9/90	24263 24264	FC20	LT 0.0380	LT 0.0450	LT 0.0470	1.4100	10.700	0.3100	LT 0.1000	LT 0.0400	1.0600	LT 0.0520	7.0400
08/9/90	24266 24267	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.3900	10.400	0.2300	LT 0.1000	LT 0.0400	0.6940	LT 0.0520	6.9400
08/9/90	24270 24271	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.3700	10.500	0.2600	LT 0.1000	LT 0.0400	0.6870	0.1600 b	6.8700
08/15/90	24276 24277	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.2400	6.9900	0.0610	LT 0.1000	LT 0.0400	0.3500	LT 0.0520	1.0200
08/15/90	24278 24279	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.2300	6.7100	0.0650	LT 0.1000	LT 0.0400	0.4300	LT 0.0520	1.0100
08/15/90	24280 24281	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.2300	6.8500	0.0610	LT 0.1000	LT 0.0400	LT 0.0330	LT 0.0520	1.0300
08/15/90	24282 24283	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.2400	6.4100	0.0570	LT 0.1000	LT 0.0400	0.3700	LT 0.0520	1.2800
08/15/90	24284 24285	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.2300	6.9900	0.0560	LT 0.1000	LT 0.0400	0.4100	LT 0.0520	1.0500
08/22/90	24295 24296	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.0800	7.2200	0.1700	LT 0.1000	LT 0.0400	1.4400	LT 0.0520	2.5300
08/22/90	24299 24300	FC20	LT 0.0380	LT 0.0450	LT 0.0470	1.1200	7.4300	0.1800	LT 0.1000	LT 0.0400	1.4900	LT 0.0520	2.6000
08/22/90	24301 24302	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.0600	7.0900	0.0990	LT 0.1000	LT 0.0400	1.0600	LT 0.0520	3.5500

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ROCKY MOUNTAIN ARSENAL PROGRAM

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SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
08/22/90	24303 24304	FC4	2.3700 a	LT 0.0300	LT 0.0240	LT 0.0210	1.3500	LT 0.0420	1.3000 a	0.2700 a	0.6760 b	0.1500 b	LT 0.0330
08/22/90	24305 24306	FC5	1.4200 a	LT 0.0300	LT 0.0240	LT 0.0210	1.0600	LT 0.0420	0.6250 a	0.2200 a	0.4000 b	0.1500 b	LT 0.0330
08/27/90	24309 24310	FC1	1.0300 a	LT 0.0300	LT 0.0240	LT 0.0210	0.3400	LT 0.0420	0.4320 a	0.1960 a	0.5630 a	0.1400 b	LT 0.0330
08/27/90	24311 24312	FC2	1.0400 a	LT 0.0300	LT 0.0240	0.0230 b	LT 0.0280	LT 0.0420	0.4220 a	0.1930 a	0.8400 a	0.6900 b	LT 0.0330
08/27/90	24313 24314	FC3	1.0800 a	LT 0.0300	LT 0.0240	LT 0.0210	0.2900	LT 0.0420	0.4400 a	0.1750 a	0.8030 a	0.1100 b	LT 0.0330
08/27/90	24315 24316	FC4	1.0200 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1800	LT 0.0420	0.3920 a	0.1640 a	0.7310 a	0.0520 b	LT 0.0330
08/27/90	24317 24318	FC5	1.0300 a	LT 0.0300	LT 0.0240	LT 0.0210	0.2100	LT 0.0420	0.3360 a	0.1780 a	0.7680 a	0.1300 b	LT 0.0330
09/2/90	24321 24322	FC1	0.6010 a	LT 0.0300	LT 0.0240	LT 0.0210	LT 0.0280	LT 0.0420	0.9320 a	0.3200 a	0.2000 b	0.3600 b	LT 0.0330
09/2/90	24324 24325	FC2	0.6170 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1800	LT 0.0420	1.0000 a	0.3100 a	0.1900 b	0.7230 a	LT 0.0330
09/2/90	24327 24328	FC2D	0.5120 a	LT 0.0300	LT 0.0240	LT 0.0210	0.0340	LT 0.0420	0.8250 a	0.2720 a	0.2200 b	0.6850 b	LT 0.0330
09/2/90	24330 24331	FC3	0.6730 a	LT 0.0300	LT 0.0240	LT 0.0210	0.7070	LT 0.0420	1.0600 a	0.3700 a	0.2000 b	0.1700 b	LT 0.0330
09/2/90	24333 24334	FC4	0.5040 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1100	LT 0.0420	0.8270 a	0.2690 a	0.2100 b	0.1500 b	LT 0.0330
09/2/90	24336 24337	FC5	0.5240 a	LT 0.0300	LT 0.0240	LT 0.0210	LT 0.0280	LT 0.0420	0.4840 a	0.2700 a	0.1800 b	0.3440 b	LT 0.0330
09/8/90	24342 24343	FC1	0.6920 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6920	LT 0.0420	0.9520 a	0.2300 a	0.3800 b	0.1400 b	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
[illegible] - Value Is Above CRL; No Estimate Available

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
08/22/90	24303	24304	FC4	LT 0.0380	LT 0.0450	LT 0.0470	1.0100	6.7600	0.1800	LT 0.1000	LT 0.0400	1.3500	LT 0.0520	2.3600
08/22/90	24305	24306	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.7090	7.0900	0.1400	LT 0.1000	LT 0.0400	1.0600	LT 0.0520	2.1300
08/27/90	24309	24310	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.3000	6.8500	0.0820	LT 0.1000	LT 0.0400	0.6850	LT 0.0520	1.3700
08/27/90	24311	24312	FC2	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	3.4500	0.0540	LT 0.1000	LT 0.0400	0.3450	LT 0.0520	LT 0.1400
08/27/90	24313	24314	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.2700	7.1200	0.0810	LT 0.1000	LT 0.0400	0.7120	LT 0.0520	1.0700
08/27/90	24315	24316	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.1700	6.5600	0.0790	LT 0.1000	LT 0.0400	0.6560	LT 0.0520	0.6560
08/27/90	24317	24318	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.2600	6.7600	0.0820	LT 0.1000	LT 0.0400	0.6760	LT 0.0520	1.0100
09/2/90	24321	24322	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.0430	3.6100	0.0840	LT 0.1000	LT 0.0400	0.5100	0.0640 b	LT 0.1400
09/2/90	24324	24325	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.2500	6.9400	0.0950	LT 0.1000	LT 0.0400	0.3470	LT 0.0520	0.6940
09/2/90	24327	24328	FC2D	LT 0.0380	LT 0.0450	LT 0.0470	0.0730	3.4200	0.0580	LT 0.1000	LT 0.0400	0.3420	LT 0.0520	0.2000
09/2/90	24330	24331	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.3530	7.0700	0.0640	LT 0.1000	LT 0.0400	0.3530	LT 0.0520	1.7700
09/2/90	24333	24334	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.1600	3.2400	0.0760	LT 0.1000	LT 0.0400	0.3240	LT 0.0520	0.5700
09/2/90	24336	24337	FC5	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	0.6870	0.0580	LT 0.1000	LT 0.0400	0.4900	0.0950 b	LT 0.1400
09/8/90	24342	24343	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.6920	10.400	0.2100	LT 0.1000	LT 0.0400	1.0400	LT 0.0520	3.4600

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site Id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
09/8/90	24346	24347	FC3	0.7100 a	LT 0.0300	LT 0.0240	LT 0.0210	0.1900	LT 0.0420	1.4200 a	0.2480 a	0.7550 a	0.0550 b	LT 0.0330
09/8/90	24348	24349	FC4	0.6580 a	LT 0.0300	LT 0.0240	LT 0.0210	0.0430	LT 0.0420	0.9870 a	0.2900 a	0.4100 b	0.0550 b	LT 0.0330
09/8/90	24350	24351	FC5	0.6900 a	LT 0.0300	LT 0.0240	LT 0.0210	LT 0.0280	LT 0.0420	1.0100 a	0.2390 a	0.3900 b	0.1900 b	LT 0.0330
09/14/90	24354	24355	FC1	0.6920 a	LT 0.0300	LT 0.0240	0.0230 b	0.3320	LT 0.0420	0.9440 a	0.3400 a	0.2800 b	0.3320 b	LT 0.0330
09/14/90	24357	24358	FC2	0.7080 a	LT 0.0300	LT 0.0240	LT 0.0210	0.0440	LT 0.0420	1.0100 a	0.3200 a	0.3400 b	0.1800 b	LT 0.0330
09/14/90	24360	24361	FC2D	0.6530 a	LT 0.0300	LT 0.0240	0.0260 b	0.1500	LT 0.0420	1.0000 a	0.2900 a	0.3200 b	0.2100 b	LT 0.0330
09/14/90	24363	24364	FC3	0.7020 a	LT 0.0300	LT 0.0240	0.0300 b	0.3800	LT 0.0420	1.0600 a	0.3500 a	0.3000 b	0.0990 b	LT 0.0330
09/14/90	24366	24367	FC4	0.9490 a	LT 0.0300	LT 0.0240	0.0230 b	LT 0.0280	LT 0.0420	1.2400 a	0.3500 a	0.4200 b	0.1100 b	LT 0.0330
09/14/90	24369	24370	FC5	0.7000 a	LT 0.0300	LT 0.0240	0.0270 b	0.1100	LT 0.0420	1.3600 a	0.2900 a	0.3130 a	0.1100 b	LT 0.0330
09/20/90	24375	24376	FC1	2.1200 a	LT 0.0300	LT 0.0240	LT 0.0210	1.7700	LT 0.0420	3.5300 a	0.4200 a	0.7070 b	0.2600 b	LT 0.0330
09/20/90	24377	24376	FC2	2.0900 a	LT 0.0300	LT 0.0240	0.0320 b	1.7400	0.0500 b	3.1400 a	0.3800 a	0.3480 b	0.7520 a	LT 0.0330
09/20/90	24379	24380	FC3	1.7700 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4100	LT 0.0420	3.1800 a	0.4100 a	0.3530 b	0.1400 b	LT 0.0330
09/20/90	24381	24382	FC4	1.6600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.6600	LT 0.0420	2.9800 a	0.3800 a	0.3310 b	0.1300 b	LT 0.0330
09/20/90	24383	24384	FC5	1.7700 a	LT 0.0300	LT 0.0240	LT 0.0210	1.4200	LT 0.0420	2.8300 a	0.3700 a	0.3550 b	0.2600 b	LT 0.0330

a - t/c weight >.25% weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
09/8/90	24346 24347	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.3000	7.0900	0.1900	LT 0.1000	LT 0.0400	1.0600	LT 0.0520	1.0600
09/8/90	24348 24349	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.0930	6.5800	0.1100	LT 0.1000	LT 0.0400	0.6580	LT 0.0520	0.2700
09/8/90	24350 24351	FC5	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	6.9000	0.1200	LT 0.1000	LT 0.0400	0.6900	LT 0.0520	LT 0.1400
09/14/90	24354 24355	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.2600	6.6400	0.1100	LT 0.1000	LT 0.0400	0.3320	LT 0.0520	1.3300
09/14/90	24357 24358	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.0700	6.7600	0.0820	LT 0.1000	LT 0.0400	0.3380	LT 0.0520	0.2300
09/14/90	24360 24361	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.1600	6.6700	0.0890	LT 0.1000	LT 0.0400	0.3330	LT 0.0520	0.6670
09/14/90	24363 24364	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.2600	3.5200	0.0990	LT 0.1000	LT 0.0400	0.3520	LT 0.0520	1.0600
09/14/90	24366 24367	FC4	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	6.4300	0.0830	LT 0.1000	LT 0.0400	0.3160	LT 0.0520	LT 0.1400
09/14/90	24369 24370	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.1400	6.8000	0.1200	LT 0.1000	LT 0.0400	0.3400	LT 0.0520	0.5200
09/20/90	24375 24376	FC1	LT 0.0380	LT 0.0450	LT 0.0470	1.0600	10.600	0.1900	LT 0.1000	LT 0.0400	1.0600	LT 0.0520	7.0700
09/20/90	24377 24378	FC2	LT 0.0380	LT 0.0450	LT 0.0470	1.0500	10.500	0.1800	LT 0.1000	LT 0.0400	1.0500	LT 0.0520	6.9700
09/20/90	24379 24380	FC3	LT 0.0380	LT 0.0450	LT 0.0470	1.0600	7.0700	0.2000	LT 0.1000	LT 0.0400	1.0600	LT 0.0520	7.0700
09/20/90	24381 24382	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.9930	9.9300	0.2100	LT 0.1000	LT 0.0400	0.9930	LT 0.0520	6.6200
09/20/90	24383 24384	FC5	LT 0.0380	LT 0.0450	LT 0.0470	1.0600	10.600	0.1700	LT 0.1000	LT 0.0400	1.0600	LT 0.0520	7.0900

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

EBASCO SERVICES INCORPORATED | ROCKY MOUNTAIN ARSENAL PROGRAM | 04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number		Site id	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,2-Dichloroethane	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride	Methylene Chloride	Chloroform	Chlorobenzene
09/26/90	24387	24388	FC1	1.0400 a	LT 0.0300	LT 0.0240	LT 0.0210	1.0400	LT 0.0420	1.3800 a	0.2600 a	0.3460 b	0.2100 b	LT 0.0330
09/26/90	24390	24391	FC2	1.0300 a	LT 0.0300	LT 0.0240	0.0390 b	1.0300	0.0480 b	1.3700 a	0.2400 a	0.3420 b	0.7130 a	LT 0.0330
09/26/90	24393	24394	FC20	1.0200 a	LT 0.0300	LT 0.0240	0.0390 b	1.0200	0.0520 b	1.3600 a	0.2300 a	0.4600 b	0.6800 b	LT 0.0330
09/26/90	24396	24397	FC3	1.0600 a	LT 0.0300	LT 0.0240	LT 0.0210	1.0600	LT 0.0420	1.4200 a	0.2800 a	0.3550 b	0.1200 b	LT 0.0330
09/26/90	24399	24400	FC4	0.9930 a	LT 0.0300	LT 0.0240	LT 0.0210	0.9930	LT 0.0420	1.3200 a	0.2300 a	0.3310 b	0.0890 b	LT 0.0330
09/26/90	24402	24403	FC5	0.7000 a	LT 0.0300	LT 0.0240	LT 0.0210	0.6990	LT 0.0420	1.4000 a	0.2250 a	0.4900 b	0.1400 b	LT 0.0330
09/28/90	24408	24409	FC2	1.7200 a	LT 0.0300	LT 0.0240	0.0500 b	1.0300	0.1400 a	2.0600 a	0.4800 a	0.4420 a	1.5000 a	LT 0.0330
09/28/90	24410	24411	FC20	1.7000 a	LT 0.0300	LT 0.0240	0.0810 b	1.0200	0.1520 a	2.0400 a	0.4800 a	0.4070 a	1.4900 a	LT 0.0330
09/28/90	24412	24413	FC2L	2.5000	LT 0.0300	LT 0.0240	LT 0.0210	0.5800	LT 0.0420	7.2000 a	0.7100	0.6300	2.5000	LT 0.0330

a - t/c weight).25t weight
b - Detected on t/c only
[redacted]e Is [redacted]; No [redacted] Avail[redacted]

EBASCO SERVICES INCORPORATED

ROCKY MOUNTAIN ARSENAL PROGRAM

04/05/91

ALL UNITS ARE IN UG/M3

SUMMARY OF VOLATILE ORGANIC COMPOUNDS INCLUDES ESTIMATED VALUES ABOVE THE CRL

Sample Date	Field Sample Number	Site Id	Dibromochloropropane	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene	Methylisobutyl Ketone	N-Nitroso-dimethylamine	Trans-1, 2-Dichloroethene	Tetrachloroethene	Trichloroethene	Meta- & Para-Xylene
09/26/90	24387 24388	FC1	LT 0.0380	LT 0.0450	LT 0.0470	0.6920	6.9200	0.1500	LT 0.1000	LT 0.0400	1.7300	LT 0.0520	3.4600
09/26/90	24390 24391	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.6850	6.8500	0.1200	LT 0.1000	LT 0.0400	1.7100	LT 0.0520	3.4200
09/26/90	24393 24394	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.6800	6.8000	0.1100	LT 0.1000	LT 0.0400	1.7000	LT 0.0520	2.7200
09/26/90	24396 24397	FC3	LT 0.0380	LT 0.0450	LT 0.0470	0.7090	7.0900	0.1400	LT 0.1000	LT 0.0400	1.7700	LT 0.0520	3.5500
09/26/90	24399 24400	FC4	LT 0.0380	LT 0.0450	LT 0.0470	0.6620	6.6200	0.1500	LT 0.1000	LT 0.0400	1.6600	LT 0.0520	3.3100
09/26/90	24402 24403	FC5	LT 0.0380	LT 0.0450	LT 0.0470	0.3500	6.9900	0.1500	LT 0.1000	LT 0.0400	1.4000	LT 0.0520	1.7500
09/28/90	24408 24409	FC2	LT 0.0380	LT 0.0450	LT 0.0470	0.6900	6.9000	LT 0.0170	LT 0.1000	LT 0.0400	0.6900	LT 0.0520	2.7600
09/28/90	24410 24411	FC20	LT 0.0380	LT 0.0450	LT 0.0470	0.6780	6.7800	0.0990	LT 0.1000	LT 0.0400	0.6780	LT 0.0520	2.0300
09/28/90	24412 24413	FC2L	LT 0.0380	LT 0.0450	LT 0.0470	LT 0.0300	3.6000	LT 0.0170	LT 0.1000	LT 0.0400	LT 0.0330	LT 0.0520	LT 0.1400

a - t/c weight).25t weight
b - Detected on t/c only
GT - Value Is Above CRL; No Estimate Available

Appendix B-3

Sample Blank Data Listings

Ebasco Services Incorporated
Field Blank Listing for TSP and PM-10.

IRA-F Program
All values are in milligrams.

Sample Date	TSP Field Sample Number	Site ID	TSP	PM-10 Field Sample Number	Site ID	PM-10
12/16/88	14703	RIFS1F	-2.20			
12/22/88	14713	RIFS1F	0.40			
12/31/88	14723	RIFS2F	0.25			
01/05/89	14728	RIFS1F	0.50			
01/14/89	14745	RIFS1F	0.30			
01/18/89	14750	RIFS1F	-1.30			
01/27/89	14762	RIFS2F	-1.55			
02/01/89	14770	RIFS1F	-0.15			
02/09/89	14783	RIFS2F	-1.60			
02/23/89	14798	RIFS1F	-1.25			
03/08/89	14966	RIFS2F	1.30			
03/22/89	14982	RIFS1F	0.00			
04/07/89	14991	RIFS1F	-0.95			
04/21/89	18355	RIFS1F	-0.45			
05/05/89	18360	RIFS1F	-1.15			
05/10/89	18364	FC2F	-0.25			
05/22/89	18374	FC2F	-0.50			
06/03/89	18388	FC2F	0.20			
06/15/89	18399	FC2F	0.15			
06/27/89	18409	FC2F	0.00			
07/09/89	18416	FC2F	-0.45			
07/21/89	18426	FC2F	0.00			
08/02/89	18433	FC2F	N/A			
08/14/89	18440	FC2F	0.35			
08/26/89	22712	FC2F	-0.50			
09/07/89	22723	FC2F	0.75			
09/19/89	22730	FC2F	0.10			
10/01/89	18447	FC2F	1.40			
10/13/89	24938	FC2F	-0.65			
10/25/89	18696	FC2F	-1.40			
11/06/89	18731	FC2F	-1.10	21929	FC2F	2.65
11/18/89	18776	FC2F	-2.05			
11/30/89	24957	FC2F	-1.60			
12/12/89	24964	FC2F	-1.25			
12/24/89	24971	FC2F	-1.55			
01/05/90	24980	FC2F	-0.70			
01/17/90	24986	FC2F	-0.45			
01/29/90	24993	FC2F	-1.05			
02/10/90	27002	FC2F	-1.00			
02/22/90	27009	FC2F	-0.15			
03/06/90	27018	FC2F	0.15			
03/18/90	27025	FC2F	-0.50			
03/30/90	27032	FC2F	0.40			
04/11/90	27039	FC2F	-0.25			
04/23/90	27046	FC2F	-1.15			
05/05/90	27053	FC2F	-1.25			
05/17/90	27060	FC2F	-0.75			
05/29/90	27067	FC2F	-0.90			

Ebasco Services Incorporated
Field Blank Listing for TSP and PM-10.

IRA-F Program
All values are in milligrams.

Sample Date	TSP Field Sample Number	Site ID	TSP	PM-10 Field Sample Number	Site ID	PM-10
06/10/90	27074	FC2F	-0.35			
06/22/90	27081	FC2F	-1.10			
07/04/90	27088	FC2F	0.15			
07/16/90	27095	FC2F	-1.35			
07/28/90	27104	FC2F	1.75			
08/09/90	27112	FC2F	1.50			
08/21/90	27120	FC2F	1.85			
09/02/90	27127	FC2F	1.80			
09/14/90	27134	FC2F	2.05			
09/26/90	27141	FC2F	1.35			

Ebasco Services Incorporated
Field Blank Listing for Metals.

IRA-F Program
All values are in micrograms.

Sample Date	Field Sample Number	Site ID	Arsenic	Cadmium	Chromium	Copper	Lead	Zinc
12/16/88	14703	RIFS1F	ND	ND	ND	ND	ND	ND
12/22/88	14713	RIFS1F	ND	ND	ND	ND	ND	ND
12/31/88	14723	RIFS2F	ND	ND	ND	ND	ND	ND
01/05/89	14728	RIFS1F	ND	ND	ND	ND	ND	ND
01/14/89	14745	RIFS1F	ND	ND	ND	ND	ND	ND
01/18/89	14750	RIFS1F	ND	ND	ND	ND	ND	ND
01/27/89	14762	RIFS2F	ND	ND	ND	ND	ND	ND
02/01/89	14770	RIFS1F	ND	ND	ND	ND	ND	10
02/09/89	14783	RIFS2F	ND	ND	ND	ND	ND	ND
02/23/89	14798	RIFS1F	ND	ND	ND	ND	ND	ND
03/08/89	14966	RIFS2F	ND	ND	ND	ND	ND	ND
03/22/89	14982	RIFS1F	ND	ND	ND	ND	ND	ND
04/07/89	14991	RIFS1F	ND	ND	ND	ND	ND	ND
04/21/89	18355	RIFS1F	ND	ND	ND	ND	ND	6.7
05/05/89	18360	RIFS1F	ND	ND	ND	ND	ND	73
05/10/89	18364	FC2F	ND	ND	ND	ND	ND	ND
05/22/89	18374	FC2F	ND	ND	ND	ND	ND	ND
06/03/89	18388	FC2F	ND	ND	ND	ND	ND	64
06/15/89	18399	FC2F	ND	ND	ND	ND	ND	10
06/27/89	18409	FC2F	ND	ND	ND	ND	ND	7.3
07/09/89	18416	FC2F	ND	ND	ND	ND	ND	ND
07/21/89	18426	FC2F	ND	ND	ND	ND	ND	ND
08/14/89	18440	FC2F	ND	ND	ND	ND	ND	ND
10/01/89	18447	FC2F	ND	ND	ND	ND	ND	ND
10/25/89	18696	FC2F	ND	ND	ND	ND	11	6.4
11/06/89	18371	FC2F	1.4	ND	ND	ND	ND	6
11/18/89	18776	FC2F	2.6	ND	ND	ND	ND	15
11/30/89	24957	FC2F	ND	ND	ND	ND	ND	ND
12/12/89	24964	FC2F	ND	ND	ND	ND	ND	ND
12/24/89	24971	FC2F	ND	ND	ND	ND	ND	ND
01/05/90	24980	FC2F	ND	ND	ND	ND	ND	ND
01/17/90	24986	FC2F	ND	ND	ND	ND	ND	ND
01/29/90	24993	FC2F	ND	ND	ND	ND	ND	20
02/10/90	27002	FC2F	ND	ND	ND	ND	ND	ND
02/22/90	27009	FC2F	ND	ND	ND	ND	ND	ND
03/06/90	27018	FC2F	ND	ND	ND	ND	ND	ND
03/18/90	27025	FC2F	ND	ND	ND	ND	ND	ND
03/30/90	27032	FC2F	ND	ND	ND	ND	ND	ND
04/11/90	27039	FC2F	ND	ND	ND	ND	ND	ND
04/23/90	27046	FC2F	ND	ND	ND	ND	ND	7.7
05/05/90	27053	FC2F	ND	ND	ND	ND	ND	6.8
05/17/90	27060	FC2F	ND	ND	ND	ND	ND	11
05/29/90	27067	FC2F	ND	ND	ND	ND	ND	ND
06/10/90	27074	FC2F	ND	ND	ND	ND	ND	ND
06/22/90	27081	FC2F	ND	ND	ND	ND	ND	ND
07/04/90	27088	FC2F	ND	ND	ND	ND	ND	ND
07/16/90	27095	FC2F	ND	ND	ND	ND	ND	ND
07/28/90	27104	FC2F	ND	ND	ND	ND	ND	11
08/09/90	27112	FC2F	ND	ND	ND	ND	ND	13
08/22/90	27120	FC2F	ND	ND	ND	ND	ND	11
09/02/90	27127	FC2F	ND	ND	ND	ND	ND	12
09/14/90	27134	FC2F	ND	ND	ND	ND	ND	8
09/26/90	27141	FC2F	ND	ND	ND	ND	ND	9.6

Ebasco Services Incorporated
Field Blank Listing for Mercury.

IRA-F Program
All values are in micrograms.

Sample Date	Field Sample Number	Site ID	Mercury
12/16/88	5845	RIFS1F	ND
12/22/88	5867	RIFS1F	ND
12/31/88	5900	RIFS2F	ND
01/27/89	16682	RIFS2F	ND
02/01/89	16706	RIFS1F	ND
02/09/89	16730	RIFS2F	ND
02/23/89	20010	RIFS1F	ND
03/08/89	20056	RIFS2F	ND
03/22/89	20096	RIFS1F	ND
04/07/89	20121	RIFS1F	ND
04/21/89	20139	RIFS1F	ND
05/05/89	20154	RIFS1F	ND
05/10/89	20166	FC2F	ND
05/16/89	23022	FC2F	ND
05/22/89	23034	FC2F	ND
05/28/89	23073	FC2F	ND
06/03/89	23100	FC2F	ND
06/09/89	23124	FC2F	ND
06/15/89	23151	FC2F	ND
06/21/89	23178	FC2F	ND
06/27/89	23208	FC2F	ND
07/09/89	23238	FC2F	ND
07/21/89	23271	FC2F	ND
08/06/89	23833	FC2F	ND
08/14/89	23319	FC2F	ND
08/26/89	23336	FC2F	ND
09/07/89	23381	FC2F	ND
09/19/89	23414	FC2F	ND
10/01/89	23447	FC2F	ND
10/13/89	23483	FC2F	ND
10/25/89	23516	FC2F	ND
11/06/89	23546	FC2F	ND
11/18/89	23577	FC2F	ND
12/12/89	23636	FC2F	ND
12/24/89	23669	FC2F	ND
01/05/90	23702	FC2F	ND
01/17/90	23737	FC2F	ND
03/06/90	23850	FC2F	ND
03/18/90	23889	FC2F	ND
03/30/90	23908	FC2F	ND
04/11/90	23941	FC2F	ND
04/23/90	23974	FC2F	ND
05/05/90	24007	FC2F	ND
05/17/90	24040	FC2F	ND
05/29/90	24073	FC2F	ND
06/10/90	24112	FC2F	ND
06/22/90	24145	FC2F	ND
07/04/90	24178	FC2F	0.13
07/16/90	24211	FC2F	ND
07/28/90	24244	FC2F	ND
08/09/90	24275	FC2F	ND
08/22/90	24294	FC2F	ND
09/02/90	24341	FC2F	ND
09/14/90	24374	FC2F	0.14
09/26/90	24407	FC2F	ND

Ebasco Services Incorporated
Field Blank Listing for Organochlorine Pesticides.

IRA-F Program
All values are in micrograms.

Sample Date	Field Sample Number	Site ID	Aldrin	Chlordane	Dieldrin	Endrin	Isodrin	PPDDE	PPDDT
03/22/89	16074	RIFS1F	ND	ND	ND	ND	ND	ND	ND
04/07/89	16091	RIFS1F	ND	ND	ND	ND	ND	ND	0.21
04/21/89	16099	RIFS1F	ND	ND	ND	ND	ND	ND	ND
05/05/89	16104	RIFS1F	ND	ND	ND	ND	ND	ND	ND
05/10/89	16108	FC2F	ND	ND	ND	ND	ND	ND	ND
05/16/89	22007	FC2F	ND	ND	ND	ND	ND	ND	ND
05/22/89	22011	FC2F	ND	ND	ND	ND	ND	ND	ND
05/28/89	22025	FC2F	ND	ND	ND	ND	ND	ND	ND
06/03/89	22034	FC2F	ND	ND	ND	ND	ND	ND	ND
06/09/89	22042	FC2F	ND	ND	ND	ND	ND	ND	ND
07/09/89	19992	FC2F	ND	ND	ND	ND	ND	ND	ND
07/15/89	19998	FC2F	ND	ND	ND	ND	ND	ND	ND
07/21/89	22505	FC2F	ND	ND	ND	ND	ND	ND	ND
07/27/89	22525	FC2F	ND	ND	ND	ND	ND	ND	ND
08/02/89	22530	FC2F	ND	ND	ND	ND	ND	ND	ND
08/08/89	22553	FC2F	ND	ND	ND	ND	ND	ND	ND
08/14/89	22560	FC2F	ND	ND	ND	ND	ND	ND	ND
08/20/89	22577	FC2F	ND	ND	ND	ND	ND	ND	ND
08/26/89	22584	FC2F	ND	ND	ND	ND	ND	ND	ND
09/01/89	22260	FC2F	ND	ND	ND	ND	ND	ND	ND
09/07/89	22247	FC2F	ND	ND	ND	ND	ND	ND	ND
09/13/89	22276	FC2F	ND	ND	ND	ND	ND	ND	ND
09/19/89	22280	FC2F	ND	ND	ND	ND	ND	ND	ND
09/25/89	22287	FC2F	ND	ND	ND	ND	ND	ND	ND
10/01/89	22295	FC2F	ND	ND	ND	ND	ND	ND	ND
10/07/89	22301	FC2F	ND	ND	ND	ND	ND	ND	ND
10/13/89	22308	FC2F	ND	ND	ND	ND	ND	ND	ND
10/19/89	22602	FC2F	ND	ND	ND	ND	ND	ND	ND
10/25/89	22609	FC2F	ND	ND	ND	ND	ND	ND	ND
10/31/89	22339	FC2F	ND	ND	ND	ND	ND	ND	ND
11/06/89	22353	FC2F	ND	ND	ND	ND	ND	ND	ND
11/12/89	22359	FC2F	ND	ND	0.12	ND	ND	ND	ND
11/18/89	22366	FC2F	ND	ND	ND	ND	ND	ND	ND
11/24/89	22372	FC2F	ND	ND	ND	ND	ND	ND	ND
12/06/89	22385	FC2F	ND	ND	ND	ND	ND	ND	ND
12/12/89	22622	FC2F	ND	ND	ND	ND	ND	ND	ND
12/18/89	22628	FC2F	ND	ND	ND	ND	ND	ND	ND
12/24/89	22395	FC2F	ND	ND	ND	ND	ND	ND	ND
12/30/89	22400	FC2F	ND	ND	ND	ND	ND	ND	ND
01/05/90	22417	FC2F	ND	ND	ND	ND	ND	ND	ND
01/11/90	22423	FC2F	ND	ND	ND	ND	ND	ND	ND
01/17/90	22431	FC2F	ND	ND	ND	ND	ND	ND	ND
01/23/90	22437	FC2F	ND	ND	ND	ND	ND	ND	ND
01/29/90	22464	FC2F	ND	ND	ND	ND	ND	ND	ND
02/04/90	22470	FC2F	ND	ND	ND	ND	ND	ND	ND
02/10/90	22637	FC2F	ND	ND	ND	ND	ND	ND	ND
02/16/90	22643	FC2F	ND	ND	ND	ND	ND	ND	ND
02/22/90	22650	FC2F	ND	ND	ND	ND	ND	ND	ND
02/28/90	22658	FC2F	ND	ND	ND	ND	ND	ND	ND
03/06/90	22665	FC2F	ND	ND	ND	ND	ND	ND	ND
03/24/90	20254	FC2F	ND	ND	ND	ND	ND	ND	ND
03/30/90	20271	FC2F	ND	ND	ND	ND	ND	ND	ND

Ebasco Services Incorporated
Field Blank Listing for Organochlorine Pesticides.

IRA-F Program
All values are in micrograms.

Sample Date	Field Sample Number	Site ID	Aldrin	Chlordane	Dieldrin	Endrin	Isodrin	PPDDE	PPDDT
04/05/90	20279	FC2F	ND	ND	ND	ND	ND	ND	ND
04/11/90	20296	FC2F	ND	ND	ND	ND	ND	ND	ND
04/18/90	20302	FC2F	ND	ND	ND	ND	ND	ND	ND
04/23/90	20309	FC2F	ND	ND	ND	ND	ND	ND	ND
04/29/90	20315	FC2F	ND	ND	ND	ND	ND	ND	ND
05/05/90	20322	FC2F	ND	ND	ND	ND	ND	ND	ND
05/11/90	20343	FC2F	ND	ND	ND	ND	ND	ND	ND
05/17/90	20354	FC2F	ND	ND	ND	ND	ND	ND	ND
05/23/90	20360	FC2F	ND	ND	ND	ND	ND	ND	ND
05/29/90	20350	FC2F	ND	ND	ND	ND	ND	ND	ND
06/04/90	20462	FC2F	ND	ND	ND	ND	ND	ND	ND
06/10/90	20469	FC2F	ND	ND	ND	ND	ND	ND	ND
06/16/90	20485	FC2F	ND	ND	ND	ND	ND	ND	ND
06/22/90	20474	FC2F	ND	ND	ND	ND	ND	ND	ND
07/10/90	20546	FC2F	ND	ND	ND	ND	ND	ND	ND
07/16/90	25597	FC2F	ND	0.14	0.15	ND	ND	ND	ND
07/22/90	25635	FC2F	ND	ND	ND	ND	ND	ND	ND
07/28/90	25642	FC2F	ND	ND	ND	ND	ND	ND	ND
08/03/90	25651	FC2F	ND	ND	ND	ND	ND	ND	ND
08/09/90	25658	FC2F	ND	ND	ND	ND	ND	ND	ND
08/15/90	25676	FC2F	ND	ND	ND	ND	ND	ND	ND
08/22/90	25669	FC2F	ND	ND	ND	ND	ND	ND	ND
08/27/90	20447	FC2F	ND	ND	ND	ND	ND	ND	ND
09/02/90	25687	FC2F	ND	ND	ND	ND	ND	ND	ND
09/08/90	20493	FC2F	ND	ND	ND	ND	ND	ND	ND
09/14/90	25695	FC2F	ND	ND	ND	ND	ND	ND	ND
09/20/90	25701	FC2F	ND	ND	ND	ND	ND	ND	ND
09/26/90	25708	FC2F	ND	ND	ND	ND	ND	ND	ND

Ebasco Services Incorporated
Field Blank Listing for Semivolatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Date	Field Sample Number	Site ID	Atrazine	Chlordane	Chlorophenyl Methylsulfoxide	Chlorophenyl Methylsulfone	Dieldrin	Endrin
11/23/88	5719	RIFS1	ND	ND	ND	ND	ND	ND
12/16/88	5734	RIFS1F	ND	ND	ND	ND	ND	ND
12/22/88	5744	RIFS1F	ND	ND	ND	ND	ND	ND
12/31/88	5754	RIFS2F	ND	ND	ND	ND	ND	ND
01/05/89	5759	RIFS1F	ND	ND	ND	ND	ND	ND
01/18/89	5777	RIFS1F	ND	ND	ND	ND	ND	ND
02/01/89	16011	RIFS1F	ND	ND	ND	ND	ND	ND
02/09/89	16025	RIFS2F	ND	ND	ND	ND	ND	ND
02/23/89	16040	RIFS1F	ND	ND	ND	ND	ND	ND
03/08/89	16058	RIFS2F	ND	ND	ND	ND	ND	ND
03/22/89	16074	RIFS1F	ND	ND	ND	ND	ND	ND
04/07/89	16091	RIFS1F	ND	ND	ND	ND	ND	ND
04/21/89	16099	RIFS1F	ND	ND	ND	ND	ND	ND
05/05/89	16104	RIFS1F	ND	ND	ND	ND	ND	ND
05/10/89	16108	FC2F	ND	ND	ND	ND	ND	ND
05/16/89	22007	FC2F	ND	ND	ND	ND	ND	ND
05/22/89	22011	FC2F	ND	ND	ND	ND	ND	ND
05/28/89	22025	FC2F	ND	ND	ND	ND	ND	ND
06/03/89	22034	FC2F	ND	ND	ND	ND	ND	ND
06/09/89	20042	FC2F	ND	ND	ND	ND	ND	ND
07/09/89	19992	FC2F	ND	ND	ND	ND	ND	ND
07/15/89	19998	FC2F	ND	ND	ND	ND	ND	ND
07/21/89	22505	FC2F	ND	ND	ND	ND	ND	ND
07/27/89	22525	FC2F	ND	ND	ND	ND	ND	ND
08/08/89	22553	FC2F	ND	ND	ND	ND	ND	ND
08/14/89	22560	FC2F	ND	ND	ND	ND	ND	ND
08/20/89	22577	FC2F	ND	ND	ND	ND	ND	ND
08/26/89	22584	FC2F	ND	ND	ND	ND	ND	ND
09/01/89	22260	FC2F	ND	ND	ND	ND	ND	ND
09/07/89	22247	FC2F	ND	ND	ND	ND	ND	ND
09/13/89	22276	FC2F	ND	ND	ND	ND	ND	ND
09/19/89	22280	FC2F	ND	ND	ND	ND	ND	ND
09/25/89	22287	FC2F	ND	ND	ND	ND	ND	ND
10/01/89	22295	FC2F	ND	ND	ND	ND	ND	ND
10/07/89	22301	FC2F	ND	ND	ND	ND	ND	ND
10/13/89	22308	FC2F	ND	ND	ND	ND	ND	ND
10/19/89	22602	FC2F	ND	ND	ND	ND	ND	ND
10/25/89	22609	FC2F	ND	ND	ND	ND	ND	ND
10/31/89	22339	FC2F	ND	ND	ND	ND	ND	ND
11/06/89	22353	FC2F	ND	ND	ND	ND	ND	ND
11/12/89	22359	FC2F	ND	ND	ND	ND	ND	ND
11/24/89	22372	FC2F	ND	ND	ND	ND	ND	ND
11/30/89	27756	FC2F	ND	ND	ND	ND	ND	ND
12/06/89	22385	FC2F	ND	ND	ND	ND	ND	ND
12/12/89	22622	FC2F	ND	ND	ND	ND	ND	ND
12/18/89	22628	FC2F	ND	ND	ND	ND	ND	ND
12/24/89	22395	FC2F	ND	ND	ND	ND	ND	ND
01/05/90	22417	FC2F	ND	ND	ND	ND	ND	ND
01/11/90	22423	FC2F	ND	ND	ND	ND	ND	ND

Ebasco Services Incorporated
Field Blank Listing for Semivolatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Date	Field Sample Number	Site ID	Isodrin	Malathion	PPDDE	PPDDT	Parathion	Supona
11/23/88	5719	RIFS1	ND	ND	ND	ND	ND	ND
12/16/88	5734	RIFS1F	ND	ND	ND	ND	ND	ND
12/22/88	5744	RIFS1F	ND	ND	ND	ND	ND	ND
12/31/88	5754	RIFS2F	ND	ND	ND	ND	ND	ND
01/05/89	5759	RIFS1F	ND	ND	ND	ND	ND	ND
01/18/89	5777	RIFS1F	ND	ND	ND	ND	ND	ND
02/01/89	16011	RIFS1F	ND	ND	ND	ND	ND	ND
02/09/89	16025	RIFS2F	ND	ND	ND	ND	ND	ND
02/23/89	16040	RIFS1F	ND	ND	ND	ND	ND	ND
03/08/89	16058	RIFS2F	ND	ND	ND	ND	ND	ND
03/22/89	16074	RIFS1F	ND	ND	ND	ND	ND	ND
04/07/89	16091	RIFS1F	ND	ND	ND	ND	ND	ND
04/21/89	16099	RIFS1F	ND	ND	ND	ND	ND	ND
05/05/89	16104	RIFS1F	ND	ND	ND	ND	ND	ND
05/10/89	16108	FC2F	ND	ND	ND	ND	ND	ND
05/16/89	22007	FC2F	ND	ND	ND	ND	ND	ND
05/22/89	22011	FC2F	ND	ND	ND	ND	ND	ND
05/28/89	22025	FC2F	ND	ND	ND	ND	ND	ND
06/03/89	22034	FC2F	ND	ND	ND	ND	ND	ND
06/09/89	20042	FC2F	ND	ND	ND	ND	ND	ND
07/09/89	19992	FC2F	ND	ND	ND	ND	ND	ND
07/15/89	19998	FC2F	ND	ND	ND	ND	ND	ND
07/21/89	22505	FC2F	ND	ND	ND	ND	ND	ND
07/27/89	22525	FC2F	ND	ND	ND	ND	ND	ND
08/08/89	22553	FC2F	ND	ND	ND	ND	ND	ND
08/14/89	22560	FC2F	ND	ND	ND	ND	ND	ND
08/20/89	22577	FC2F	ND	ND	ND	ND	ND	ND
08/26/89	22584	FC2F	ND	ND	ND	ND	ND	ND
09/01/89	22260	FC2F	ND	ND	ND	ND	ND	ND
09/07/89	22247	FC2F	ND	ND	ND	ND	ND	ND
09/13/89	22276	FC2F	ND	ND	ND	ND	ND	ND
09/19/89	22280	FC2F	ND	ND	ND	ND	ND	ND
09/25/89	22287	FC2F	ND	ND	ND	ND	ND	ND
10/01/89	22295	FC2F	ND	ND	ND	ND	ND	ND
10/07/89	22301	FC2F	ND	ND	ND	ND	ND	ND
10/13/89	22308	FC2F	ND	ND	ND	ND	ND	ND
10/19/89	22602	FC2F	ND	ND	ND	ND	ND	ND
10/25/89	22609	FC2F	ND	ND	ND	ND	ND	ND
10/31/89	22339	FC2F	ND	ND	ND	ND	ND	ND
11/06/89	22353	FC2F	ND	ND	ND	ND	ND	ND
11/12/89	22359	FC2F	ND	ND	ND	ND	ND	ND
11/24/89	22372	FC2F	ND	ND	ND	ND	ND	ND
11/30/89	27756	FC2F	ND	ND	ND	ND	ND	ND
12/06/89	22385	FC2F	ND	ND	ND	ND	ND	ND
12/12/89	22622	FC2F	ND	ND	ND	ND	ND	ND
12/18/89	22628	FC2F	ND	ND	ND	ND	ND	ND
12/24/89	22395	FC2F	ND	ND	ND	ND	ND	ND
01/05/90	22417	FC2F	ND	ND	ND	ND	ND	ND
01/11/90	22423	FC2F	ND	ND	ND	ND	ND	ND

Ebasco Services Incorporated
Field Blank Listing for Semivolatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Date	Field Sample Number	Site ID	Atrazine	Chlordane	Chlorophenyl Methylsulfoxide	Chlorophenyl Methylsulfone	Dieldrin	Endrin
04/11/90	20296	FC2F	ND	ND	ND	ND	ND	ND
04/18/90	20302	FC2F	ND	ND	ND	ND	ND	ND
04/23/90	20309	FC2F	ND	ND	ND	ND	ND	ND
04/29/90	20315	FC2F	ND	ND	ND	ND	ND	ND
05/05/90	20322	FC2F	ND	ND	ND	ND	ND	ND
05/11/90	20343	FC2F	ND	ND	ND	ND	ND	ND
05/17/90	20354	FC2F	ND	ND	ND	ND	ND	ND
05/23/90	20360	FC2F	ND	ND	ND	ND	ND	ND
05/29/90	20350	FC2F	ND	ND	ND	ND	ND	ND
07/22/90	25635	FC2F	ND	ND	ND	ND	ND	ND
07/28/90	25642	FC2F	ND	ND	ND	ND	ND	ND
08/03/90	25651	FC2F	ND	ND	ND	ND	ND	ND
08/09/90	25658	FC2F	ND	ND	ND	ND	ND	ND
08/15/90	25676	FC2F	ND	ND	ND	ND	ND	ND
08/22/90	25669	FC2F	ND	ND	ND	ND	ND	ND
08/27/90	20447	FC2F	ND	ND	ND	ND	ND	ND
09/02/90	25687	FC2F	ND	ND	ND	ND	ND	ND
09/08/90	20493	FC2F	ND	ND	ND	ND	ND	ND
09/14/90	25695	FC2F	ND	ND	ND	ND	ND	ND
09/20/90	25701	FC2F	ND	ND	ND	ND	ND	ND
09/26/90	25708	FC2F	ND	ND	ND	ND	ND	ND

Ebasco Services Incorporated
Field Blank Listing for Semivolatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Date	Field Sample Number	Site ID	Isodrin	Malathion	PPDDE	PPDDT	Parathion	Supona
04/11/90	20296	FC2F	ND	ND	ND	ND		ND
04/18/90	20302	FC2F	ND	ND	ND	ND		ND
04/23/90	20309	FC2F	ND	ND	ND	ND		ND
04/29/90	20315	FC2F	ND	ND	ND	ND		ND
05/05/90	20322	FC2F	ND	ND	ND	ND		ND
05/11/90	20343	FC2F	ND	ND	ND	ND		ND
05/17/90	20354	FC2F	ND	ND	ND	ND		ND
05/23/90	20360	FC2F	ND	ND	ND	ND		ND
05/29/90	20350	FC2F	ND	ND	ND	ND		ND
07/22/90	25635	FC2F	ND	ND	ND	ND		ND
07/28/90	25642	FC2F	ND	ND	ND	ND		ND
08/03/90	25651	FC2F	ND	ND	ND	ND		ND
08/09/90	25658	FC2F	ND	ND	ND	ND		ND
08/15/90	25676	FC2F	ND	ND	ND	ND		ND
08/22/90	25669	FC2F	ND	ND	ND	ND		ND
08/27/90	20447	FC2F	ND	ND	ND	ND		ND
09/02/90	25687	FC2F	ND	ND	ND	ND		ND
09/08/90	20493	FC2F	ND	ND	ND	ND		ND
09/14/90	25695	FC2F	ND	ND	ND	ND		ND
09/20/90	25701	FC2F	ND	ND	ND	ND		ND
09/26/90	25708	FC2F	ND	ND	ND	ND		ND

Ebasco Services Incorporated
Field Blank Listing for Volatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Sample Date	Field Sample Number (T)	Field Sample Number (T/C)	Site ID	111TCE	112TCE	11DCLE	12DCLE	12DMB	BCHPD	C6H6	CCL4	CH2CL2	CHCL3	CLC6H5
11/23/88	5818	5819	RIFS1	N/A	ND	N/A	ND	N/A	ND	0.067	ND	0.148	ND	ND
12/16/88	5843	5844	RIFS1F	N/A	ND	N/A	ND	N/A	ND	0.052	ND	0.014	ND	ND
12/22/88	5868	5869	RIFS1F	N/A	ND	N/A	ND	N/A	ND	0.037	ND	0.107	ND	ND
12/31/88	5901	5902	RIFS2F	N/A	ND	N/A	ND	N/A	ND	0.074	ND	N/A	ND	ND
01/05/89	17476	17477	RIFS1F	N/A	ND	N/A	ND	N/A	ND	0.045	ND	0.2	ND	ND
01/14/89	16619	16620	RIFS1F	N/A	ND	N/A	ND	N/A	ND	0.116	0.039	0.13	0.031	0.028
01/18/89	16643	16644	RIFS1F	N/A	ND	N/A	ND	N/A	ND	0.084	ND	0.055	ND	ND
01/27/89	16683	16684	RIFS2F	N/A	ND	N/A	0.074	N/A	ND	0.055	0.1	0.173	0.011	ND
02/09/89	16731	16732	RIFS2F	ND	ND	ND	0.015	ND	ND	0.051	0.027	0.2	ND	ND
02/23/89	20011	20012	RIFS1F	ND	ND	ND	0.099	ND	ND	0.015	0.21	0.054	ND	ND
03/22/89	20097	20098	RIFS1F	ND	ND	ND	ND	ND	ND	ND	ND	0.035	ND	ND
04/07/89	20122	20123	RIFS1F	ND	ND	ND	ND	ND	ND	0.0098	ND	0.051	ND	ND
04/21/89	20140	20141	RIFS1F	ND	ND	ND	ND	ND	ND	ND	ND	0.21	ND	ND
05/05/89	20155	20156	RIFS1F	ND	ND	ND	ND	ND	ND	0.019	ND	0.038	ND	ND
05/10/89	20167	20168	FC2F	ND	ND	ND	ND	0.024	ND	ND	ND	ND	ND	ND
05/16/89	23023	23024	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	0.186	ND	ND
05/22/89	23035	23036	FC2F	ND	ND	ND	ND	ND	ND	0.0076	ND	ND	ND	ND
05/28/89	23074	23075	FC2F	ND	ND	ND	ND	ND	ND	0.033	ND	0.116	ND	ND
06/03/89	23101	23102	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	0.025	ND	ND
06/09/89	23125	23126	FC2F	ND	ND	ND	ND	ND	ND	0.016	ND	ND	ND	ND
06/15/89	23152	23153	FC2F	ND	ND	ND	ND	ND	ND	0.0095	ND	0.027	ND	ND
06/21/89	23179	23180	FC2F	ND	ND	ND	ND	ND	ND	0.024	ND	0.024	ND	ND
06/27/89	23209	23210	FC2F	ND	ND	ND	ND	ND	ND	0.019	ND	ND	ND	ND
07/03/89	23221	23222	FC2F	0.045	ND	ND	ND	0.1	ND	0.043	0.018	0.04	ND	ND
07/09/89	23239	23240	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	0.035	ND	ND
07/15/89	23245	23246	FC2F	0.015	ND	ND	ND	ND	ND	0.0723	ND	0.2	ND	ND
07/21/89	23272	23273	FC2F	ND	ND	ND	ND	ND	ND	0.0378	ND	ND	ND	ND
07/27/89	23284	23285	FC2F	ND	ND	ND	ND	ND	ND	0.008	ND	ND	ND	ND
08/08/89	23299	23300	FC2F	ND	ND	ND	ND	ND	ND	0.0072	ND	0.027	ND	ND
08/14/89	23320	23321	FC2F	ND	ND	ND	ND	ND	ND	0.0185	ND	0.017	ND	ND
09/01/89	23361	23362	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/07/89	23382	23383	FC2F	ND	ND	ND	ND	ND	ND	0.037	ND	0.018	ND	ND
09/13/89	23394	23395	FC2F	ND	ND	ND	ND	ND	ND	0.012	ND	ND	ND	ND
09/19/89	23415	23416	FC2F	ND	ND	ND	ND	ND	ND	0.028	ND	0.04	ND	ND
09/25/89	23427	23428	FC2F	ND	ND	ND	ND	ND	ND	0.014	ND	ND	ND	ND
10/01/89	23448	23449	FC2F	ND	ND	ND	ND	ND	ND	0.033	ND	0.24	ND	ND
10/07/89	24463	24464	FC2F	ND	ND	ND	ND	ND	ND	0.0357	ND	ND	ND	ND
10/13/89	23484	23485	FC2F	ND	ND	ND	ND	ND	ND	0.016	ND	ND	ND	ND
10/19/89	23496	23497	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/25/89	23517	23518	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/31/89	23529	23530	FC2F	ND	ND	ND	ND	ND	ND	0.018	ND	0.049	ND	ND
11/12/89	23557	23558	FC2F	ND	ND	ND	ND	ND	ND	0.01	ND	0.028	ND	ND
11/18/89	23578	23579	FC2F	ND	ND	ND	ND	ND	ND	0.018	ND	0.012	ND	ND
11/24/89	23590	23591	FC2F	ND	ND	ND	ND	ND	ND	0.058	ND	ND	ND	ND
11/30/89	23604	23605	FC2F	ND	ND	ND	ND	ND	ND	0.029	ND	ND	ND	ND
12/06/89	23616	23617	FC2F	ND	ND	ND	ND	ND	ND	0.01	ND	ND	ND	ND
12/12/89	23637	23638	FC2F	ND	ND	ND	ND	ND	ND	0.012	ND	ND	ND	ND
12/18/89	23649	23650	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/24/89	23670	23671	FC2F	ND	ND	ND	ND	ND	ND	0.013	ND	ND	ND	ND
12/30/89	23682	23683	FC2F	ND	ND	ND	ND	ND	ND	0.034	ND	0.064	ND	ND
01/05/90	23703	23704	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	0.045	ND	ND
01/11/90	23719	23720	FC2F	ND	ND	ND	ND	ND	ND	0.009	ND	0.025	ND	ND
01/23/90	23750	23751	FC2F	ND	ND	ND	ND	ND	ND	0.0191	ND	ND	ND	ND

Ebasco Services Incorporated
Field Blank Listing for Volatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Sample Date	Field Sample Number (T)	(T/C)	Site ID	DBCP	DCPD	DMDS	ETC6H5	MEC6H5	MIBK	NNDMEA	T12DCE	TCLEE	TRCLE	XYLEN
11/23/88	5818	5819	RIFS1	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND
12/16/88	5843	5844	RIFS1F	ND	ND	N/A	ND	0.043	ND	ND	ND	ND	ND	ND
12/22/88	5868	5869	RIFS1F	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND
12/31/88	5901	5902	RIFS2F	ND	ND	N/A	ND	0.047	ND	ND	ND	ND	ND	ND
01/05/89	17476	17477	RIFS1F	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND
01/14/89	16619	16620	RIFS1F	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND
01/18/89	16643	16644	RIFS1F	ND	ND	N/A	ND	ND	ND	ND	ND	ND	ND	ND
01/27/89	16683	16684	RIFS2F	ND	ND	N/A	ND	0.12	ND	ND	ND	ND	ND	ND
02/09/89	16731	16732	RIFS2F	ND	ND	ND	ND	0.12	ND	ND	ND	ND	ND	ND
02/23/89	20011	20012	RIFS1F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
03/22/89	20097	20098	RIFS1F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/07/89	20122	20123	RIFS1F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/21/89	20140	20141	RIFS1F	ND	ND	ND	ND	0.23	ND	ND	ND	ND	ND	ND
05/05/89	20155	20156	RIFS1F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
05/10/89	20167	20168	FC2F	ND	ND	ND	0.017	ND	ND	ND	ND	ND	ND	0.058
05/16/89	23023	23024	FC2F	ND	ND	ND	ND	0.1	ND	ND	ND	ND	ND	ND
05/22/89	23035	23036	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
05/28/89	23074	23075	FC2F	ND	ND	ND	ND	0.131	ND	ND	ND	ND	ND	ND
06/03/89	23101	23102	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
06/09/89	23125	23126	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
06/15/89	23152	23153	FC2F	0.097	0.016	ND	ND	ND	0.026	ND	ND	ND	ND	ND
06/21/89	23179	23180	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
06/27/89	23209	23210	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/03/89	23221	23222	FC2F	ND	ND	ND	0.094	0.1	ND	ND	ND	0.1	ND	0.2
07/09/89	23239	23240	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/15/89	23245	23246	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/21/89	23272	23273	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/27/89	23284	23285	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/08/89	23299	23300	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/14/89	23320	23321	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/01/89	23361	23362	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/07/89	23382	23383	FC2F	ND	ND	ND	ND	0.143	ND	ND	ND	ND	ND	ND
09/13/89	23394	23395	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/19/89	23415	23416	FC2F	ND	ND	ND	ND	0.031	ND	ND	ND	ND	ND	ND
09/25/89	23427	23428	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/01/89	23448	23449	FC2F	ND	ND	ND	ND	0.139	ND	ND	ND	ND	ND	ND
10/07/89	24463	24464	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/13/89	23484	23485	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/19/89	23496	23497	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/25/89	23517	23518	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/31/89	23529	23530	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11/12/89	23557	23558	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11/18/89	23578	23579	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11/24/89	23590	23591	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11/30/89	23604	23605	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/06/89	23616	23617	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/12/89	23637	23638	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/18/89	23649	23650	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/24/89	23670	23671	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/30/89	23682	23683	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
01/05/90	23703	23704	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
01/11/90	23719	23720	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
01/23/90	23750	23751	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Ebasco Services Incorporated
Field Blank Listing for Volatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Sample Date	Field Sample Number (T)	Field Sample Number (T/C)	Site ID	111TCE	112TCE	11DCLE	12DCLE	12DMB	BCHPD	C6H6	CCL4	CH2CL2	CHCL3	CLC6H5
02/04/90	23776	23777	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/10/90	23790	23791	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/16/90	23802	23803	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/22/90	23816	23817	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/28/90	23828	23829	FC2F	ND	ND	ND	ND	ND	ND	0.0076	ND	ND	ND	ND
03/06/90	23848	23849	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
03/12/90	23861	23862	FC2F	ND	ND	ND	ND	ND	ND	0.018	ND	ND	ND	ND
03/18/90	23887	23888	FC2F	ND	ND	ND	ND	ND	ND	0.034	ND	0.058	ND	ND
03/24/90	23894	23895	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/05/90	23919	23920	FC2F	ND	ND	ND	ND	ND	ND	0.09	ND	0.055	ND	ND
04/11/90	23939	23940	FC2F	ND	ND	ND	ND	ND	ND	0.072	ND	0.016	ND	ND
04/18/90	23952	23953	FC2F	ND	ND	ND	ND	ND	ND	0.089	ND	ND	ND	ND
04/23/90	23972	23973	FC2F	ND	ND	ND	ND	ND	ND	0.035	ND	0.066	ND	ND
04/29/90	23985	23986	FC2F	ND	ND	ND	ND	ND	ND	0.0237	ND	ND	ND	ND
05/17/90	24038	24039	FC2F	ND	ND	ND	ND	ND	ND	0.023	ND	ND	ND	ND
05/29/90	24071	24072	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	0.058	ND	ND
06/10/90	24110	24111	FC2F	ND	ND	ND	ND	ND	ND	0.041	ND	0.037	ND	ND
06/16/90	24123	24124	FC2F	ND	ND	ND	ND	ND	ND	0.08	ND	ND	ND	ND
06/22/90	24143	24144	FC2F	ND	ND	ND	ND	ND	ND	0.073	ND	ND	ND	ND
06/28/90	24156	24157	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/04/90	24176	24177	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	0.018	ND	ND
07/10/90	24189	24190	FC2F	ND	ND	ND	ND	ND	ND	0.023	ND	ND	ND	ND
07/16/90	24209	24210	FC2F	ND	ND	ND	ND	ND	ND	0.0096	ND	ND	ND	ND
07/22/90	24222	24223	FC2F	ND	ND	ND	ND	ND	ND	0.037	ND	ND	ND	ND
07/28/90	24242	24243	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/03/90	24255	24256	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/09/90	24273	24274	FC2F	ND	ND	ND	ND	0.014	ND	0.02	ND	ND	ND	ND
08/15/90	24286	24287	FC2F	ND	ND	ND	ND	ND	ND	0.067	ND	0.154	ND	ND
08/22/90	24307	24308	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	0.111	ND	ND
08/27/90	24319	24320	FC2F	ND	ND	ND	ND	ND	ND	0.023	ND	0.2	ND	ND
09/02/90	24339	24340	FC2F	ND	ND	ND	ND	ND	ND	0.013	ND	0.1	ND	ND
09/08/90	24352	24353	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/14/90	24372	24373	FC2F	ND	ND	ND	ND	ND	ND	0.0175	ND	ND	ND	ND
09/20/90	24385	24386	FC2F	ND	ND	ND	ND	ND	ND	0.013	ND	ND	ND	ND
09/26/90	24405	24406	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/28/90	24416	24417	FC2F	ND	ND	ND	ND	ND	ND	0.03	ND	ND	ND	ND

Ebasco Services Incorporated
Field Blank Listing for Volatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Sample Date	Field Sample Number (T)	Field Sample Number (T/C)	Site ID	DBCP	DCPD	DMDS	ETC6H5	MEC6H5	MIBK	NNDMEA	T12DCE	TCLEE	TRCLE	XYLEN
02/04/90	23776	23777	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/10/90	23790	23791	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/16/90	23802	23803	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/22/90	23816	23817	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
02/28/90	23828	23829	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
03/06/90	23848	23849	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
03/12/90	23861	23862	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
03/18/90	23887	23888	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
03/24/90	23894	23895	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/05/90	23919	23920	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/11/90	23939	23940	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/18/90	23952	23953	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/23/90	23972	23973	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
04/29/90	23985	23986	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
05/17/90	24038	24039	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
05/29/90	24071	24072	FC2F	ND	ND	ND	ND	0.029	ND	ND	ND	ND	ND	ND
06/10/90	24110	24111	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
06/16/90	24123	24124	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
06/22/90	24143	24144	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
06/28/90	24156	24157	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/04/90	24176	24177	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/10/90	24189	24190	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/16/90	24209	24210	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/22/90	24222	24223	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
07/28/90	24242	24243	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/03/90	24255	24256	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/09/90	24273	24274	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/15/90	24286	24287	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/22/90	24307	24308	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
08/27/90	24319	24320	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/02/90	24339	24340	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/08/90	24352	24353	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/14/90	24372	24373	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/20/90	24385	24386	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/26/90	24405	24406	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
09/28/90	24416	24417	FC2F	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Ebasco Services Incorporated
Trip Blank Listings for TSP, Metals, Arsenic, Mercury, SVOCs, and OCPs.

IRA-F Program
All values are in micrograms.

TSP:

Sample Date	Field Sample Number	Site ID	TSP
05/10/89	18370	FC2TB	-1000

Metals and Arsenic:

Sample Date	Field Sample Number	Site ID	Arsenic	Cadmium	Chromium	Copper	Lead	Zinc
05/10/89	18370	FC2TB	ND	ND	ND	ND	ND	56

Mercury:

Sample Date	Field Sample Number	Site ID	Mercury
05/10/89	20184	FC2TB	ND

Semivolatile Organic Compounds:

Sample Date	Field Sample Number	Site ID	Atrazine	Chlordane	Chlorophenyl Methylsulfoxide	Chlorophenyl Methylsulfone	Dieldrin	Endrin
11/10/88	5710	RIFS1T	ND	ND	ND	ND	ND	ND
11/17/88	5715	RIFS1T	ND	ND	ND	ND	ND	ND
12/01/88	5725	RIFS1	ND	ND	ND	ND	ND	ND
12/10/88	5730	RIFS1T	ND	ND	ND	ND	ND	ND
05/10/89	16114	FC2TB	ND	ND	ND	ND	ND	ND

			Isodrin	Malathion	PPDDE	PPDDT	Parathion	Supona
11/10/88	5710	RIFS1T	ND	ND	ND	ND	ND	ND
11/17/88	5715	RIFS1T	ND	ND	ND	ND	ND	ND
12/01/88	5725	RIFS1	ND	ND	ND	ND	ND	ND
12/10/88	5730	RIFS1T	ND	ND	ND	ND	ND	ND
05/10/89	16114	FC2TB	ND	ND	ND	ND	ND	ND

Organochlorine Pesticides:

Sample Date	Field Sample Number	Site ID	Aldrin	Chlordane	Dieldrin	Endrin	Isodrin	PPDDE	PPDDT
05/10/89	16114	FC2TB	ND	ND	ND	ND	ND	ND	ND

Ebasco Services Incorporated
Trip Blank Listing for Volatile Organic Compounds.

IRA-F Program
All values are in micrograms.

Volatile Organic Compounds:

Sample Date	Field Sample Number (T)	Field Sample Number (T/C)	Site ID	111TCE	112TCE	11DCLE	12DCLE	12DMB	BCHPD	C6H6	CCL4	CH2CL2	CHCL3	CLC6H5
11/10/88	5807	5807	RIFS1T	N/A	ND	N/A	ND	N/A	ND	0.098	ND	ND	ND	ND
11/17/88	5810	5811	RIFS1T	N/A	ND	N/A	ND	N/A	ND	0.104	ND	0.013	ND	ND
12/01/88	5822	5823	RIFS1	N/A	ND	N/A	ND	N/A	ND	0.052	ND	ND	ND	ND
12/10/88	5830	5831	RIFS1T	N/A	ND	N/A	ND	N/A	ND	0.05	ND	0.073	ND	ND
05/10/89	20185	20186	FC2TB	ND	ND	ND	ND	ND	ND	0.01	ND	0.21	ND	ND
08/20/89	23328	23329	FC2TB	ND	ND	ND	ND	ND	ND	0.19	ND	ND	ND	ND

Sample Date	Field Sample Number (T)	Field Sample Number (T/C)	Site ID	DCPD	DMDS	ETC6H5	MEC6H5	MIBK	NNDMEA	T12DCE	TCLEE	TRCLE	XYLEN
11/10/88	5807	5807	RIFS1T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
11/17/88	5810	5811	RIFS1T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/01/88	5822	5823	RIFS1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/10/88	5830	5831	RIFS1T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
05/10/89	20185	20186	FC2TB	ND	ND	ND	0.072	0.017	ND	ND	ND	ND	ND
08/20/89	23328	23329	FC2TB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Appendix C

IRA-F Field Program

Cap and Vent Monitoring

Field Data Sheets

Waste Pile Vents

Revised 5-26-89

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F WASTE PILE VENTS

DATE: 1 June 89 SAMPLER: Jack Al Gist

START TIME: 12:25 MST START ATMOS. PRESS.: 24.87 WS: 3mph WD: ESE TEMP: 64

END TIME: 1:45 MST END ATMOS. PRESS.: 24.82 WS: NA WD: NA TEMP: NA

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop throughout the sample period. Take sample 1" below vent opening.

Location	OVA	HNU	H2S	NH3
VENT #: 1	0.3	0.0	-0-	NT
VENT #: 11	0.0	0.0	-0-	NT
VENT #: 7	0.1	0.0	-0-	NT
VENT #: 21	0.0	0.0	-0-	NT
VENT #: 20	2.8	0.1	-0-	NT
SUMP #: 3	0.0	0.0	-0-	NT
VENT #: 22	0.0	0.0	-0-	NT
VENT #: 18	0.1	0.0	-0-	NT
VENT #: 8	0.0	0.0	-0-	NT
VENT #: 2	0.0	0.0	-0-	NT
VENT #: 24	0.2	0.0	-0-	NT
SUMP #: 2	0.0	0.0	-0-	NT
VENT #: 23	0.0	0.0	-0-	NT
VENT #: 15	0.2	0.1	-0-	NT
VENT #: 9	0.3	0.1	-0-	NT
VENT #: 3	0.0	0.0	-0-	NT
VENT #: 17	0.8	0.2	-0-	NT
SUMP #: 1	0.0	0.0	-0-	NT
VENT #: 13	0.1	0.0	-0-	NT
VENT #: 19	0.5	0.1	-0-	NT
VENT #: 6	0.2	0.1	-0-	NT
VENT #: 4	0.0	0.0	-0-	NT
VENT #: 12	0.6	0.1	-0-	
VENT #: 16	0.5	0.1	-0-	NT
VENT #: 14	0.4	0.1	-0-	NT
VENT #: 10	0.3	0.1	-0-	NT
VENT #: 5	2.2	0.0	-0-	NT
VENT #: 25	0.6	0.2	-0-	NT

NT = Not Taken
NA = Not Available

Calibrations for: OVA 50990, HNU 201078, Exotox H2S 1278445, and NH3 N/A are on page 1 of the CAL logbook Cmp 1 dated 1 June 89.

ADDITIONAL COMMENTS: All sumps had their lids off - they were being pumped dry. Lighting problems at AQ - Could not get ending WS, WD and Temp.

SAMPLING DATA SHEET
BASIN-F WASTE PILE VENTS

PRIVILEGED INFORMATION
PREPARED IN SUPPORT OF LITIGATIC

DATE: July 19, 1989 SAMPLER: Jack D [illegible]

START TIME: 0930 MST START ATMOS. PRESS.: 24.96 WS: 8 mph WD: NE TEMP: 72

END TIME: 1145 MST END ATMOS. PRESS.: 24.95 WS: 6 mph WD: NE TEMP: 80

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop thro out the sample period. Take sample 1" below vent opening.

	VENT #: 1	VENT #: 11	VENT #: 7	VENT #: 21	VENT #: 20	SUMP #: 3
OVA	0.0	0.0	0.0	0.0	0.8	0.0
HNU	0.0	0.0	0.0	0.0	0.1	0.0
H2S	NT	NT	NT	NT	NT	NT
NH3	-0-	-0-	-0-	-0-	-0-	-0-

	VENT #: 22	VENT #: 18	VENT #: 8	VENT #: 2	VENT #: 24	SUMP #: 2
OVA	0.0	0.0	0.0	0.0	0.0	0.0
HNU	0.0	0.0	0.0	0.0	0.0	0.0
H2S	NT	NT	NT	NT	NT	NT
NH3	-0-	-0-	-0-	-0-	-0-	0.0

	VENT #: 23	VENT #: 15	VENT #: 9	VENT #: 3	VENT #: 17	SUMP #: 1
OVA	2.0	0.0	0.0	0.0	0.0	0.0
HNU	0.4	0.0	0.0	0.0	0.0	0.0
H2S	NT	NT	NT	NT	NT	NT
NH3	-0-	-0-	-0-	-0-	-0-	-0-

	VENT #: 13	VENT #: 19	VENT #: 6	VENT #: 4	VENT #: 12
OVA	0.2	0.0	0.0	0.0	0.2
HNU	0.0	0.0	0.0	0.0	0.2
H2S	NT	NT	NT	NT	NT
NH3	-0-	-0-	-0-	-0-	-0-

NT = NOT TAKEN

NA = NOT AVAILAB

	VENT #: 16	VENT #: 14	VENT #: 10	VENT #: 5	VENT #: 25
OVA	0.0	0.4	0.6	2.4	1.4
HNU	0.0	0.1	0.2	0.3	0.5
H2S	NT	NT	NT	NT	NT
NH3	-0-	-0-	-0-	-0-	-0-

Calibrations for: OVA 50990, HNU 801169, Exotox Not Used, and NH3 Factory Calibrated

are on page 011 of the CAL logbook CMPI dated 7/19/89.

ADDITIONAL COMMENTS: Health & Safety were using my Exotox because theirs would not turn on. All the lids were off the sumps - A crew was pumping out of two of them. All breathing zone samples were zero.

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE VENTS

DATE: 08/24/89 SAMPLER: [illegible]

START TIME: 1100 MST START ATMOS. PRESS.: 24.55 WS: 6mph WD: EEN TEMP: 88 °F

END TIME: 1230 MST END ATMOS. PRESS.: 24.49 WS: 9mph WD: EEN TEMP: 89 °F

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop throughout the sample period. Take sample 1" below vent opening.

VENT #:	OVA	HNU	H_2S	NH_3
1	0.9	0.1	-0-	-0-
11	0.4	0.0	-0-	-0-
7	1.2	0.2	-0-	-0-
21	0.5	0.0	-0-	-0-
20	28.0	4.0	-0-	-0-
22	0.8	0.2	-0-	-0-
18	0.0	0.0	-0-	-0-
8	1.8	0.4	-0-	-0-
2	0.8	0.2	-0-	-0-
24	4.4	0.4	-0-	-0-
23	1.0	0.3	-0-	-0-
15	0.6	0.2	-0-	-0-
9	0.4	0.1	-0-	-0-
3	2.6	0.4	-0-	-0-
17	1.0	0.6	-0-	-0-
13	0.5	0.1	-0-	-0-
19	0.5	0.1	-0-	-0-
6	0.3	0.1	-0-	-0-
4	0.4	0.0	-0-	-0-
12	1.6	0.8	-0-	-0-
16	2.5	0.5	-0-	-0-
14	0.2	0.1	-0-	-0-
10	0.5	0.4	-0-	-0-
5	3.1	0.2	-0-	-0-
25	0.8	0.3	-0-	-0-

SUMP #:	OVA	HNU	H_2S	NH_3
3	0.0	0.0	-0-	-0-
2	0.0	0.0	-0-	-0-
1	0.2	0.1	-0-	-0-

NT = NOT TAKEN

NA = NOT AVAILAB

Calibrations for: OVA 50990, HNU 801169, Exotox 664495, and NH3 Factory Calibrated are on page 16 of the CAL logbook CMP 1 dated 24 Aug 89.

ADDITIONAL COMMENTS:

Revised 6-02-89

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F WASTE PILE VENTS

DATE: 09/27/89 SAMPLER: Jack D Yeast

START TIME: 1100 MST START ATMOS. PRESS.: 24.87 WS: <5 mph WD: NNW TEMP: 80°

END TIME: 1330 MST END ATMOS. PRESS.: 24.83 WS: <5 mph WD: EEN TEMP: 80°

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop thro out the sample period. Take sample 1" below vent opening.

	OVA	HNU	H2S	NH3
VENT #: 1	0.0	0.0	0.0	0.0
VENT #: 11	0.0	0.0	0.0	0.0
VENT #: 7	0.2	0.0	0.0	0.0
VENT #: 21	0.0	0.0	0.0	0.0
VENT #: 20	4.2	0.0	0.0	0.0
VENT #: 22	0.0	0.0	0.0	0.0
VENT #: 18	0.5	0.0	0.0	0.0
VENT #: 8	1.2	0.0	0.0	0.0
VENT #: 2	0.2	0.0	0.0	0.0
VENT #: 24	0.3	0.0	0.0	0.0
VENT #: 23	0.6	0.0	0.0	0.0
VENT #: 15	0.0	0.0	0.0	0.0
VENT #: 9	0.2	0.0	0.0	0.0
VENT #: 3	0.4	0.1	0.0	0.0
VENT #: 17	0.3	0.0	0.0	0.0
VENT #: 13	0.0	0.0	0.0	0.0
VENT #: 19	0.0	0.0	0.0	0.0
VENT #: 6	0.0	0.0	0.0	0.0
VENT #: 4 *	NT	NT	NT	NT
VENT #: 12	0.3	0.0	0.0	0.0
VENT #: 16	0.0	0.0	0.0	0.0
VENT #: 14	0.4	0.0	0.0	0.0
VENT #: 10	0.0	0.0	0.0	0.0
VENT #: 5	1.8	0.3	0.0	0.0
VENT #: 25	0.6	0.3	0.0	0.0
SUMP #: 3	0.0	0.0	0.0	0.0
SUMP #: 2	0.4	0.2	0.0	0.0
SUMP #: 1	1.4	0.2	0.0	0.0

NT = NOT TAKEN

NA = NOT AVAILAB

Calibrations for: OVA 50973, HNU 801078, Exotox ~~[illegible]~~ 664495 and NH3 Gastec Pump

are on page 19 of the CAL logbook 1 dated 09/29/89.

ADDITIONAL COMMENTS: 1. Sump Not Covered 2. Sump covered 3. Sump Covered. * Sample not taken because exhaust of a generator was only about 4' away and interfered with readings.

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F WASTE PILE VENTS

DATE: 12-04-89 SAMPLER: Jack D Geist

START TIME: 1050 MST START ATMOS. PRESS.: 24.71 WS: ≤5 mph WD: NNW TEMP: 61°

END TIME: 1145 MST END ATMOS. PRESS.: 24.69 WS: 10 mph WD: NNE TEMP: 61°

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop thro out the sample period. Take sample 1" below vent opening.

Location	OVA	HNU	H2S	NH3
VENT #: 1	0.5	0.0	—	—
VENT #: 11	~~0.7~~ 1.0 gcg	0.1	—	—
VENT #: 7	0.4	0.0	—	—
VENT #: 21	1.6	0.0	—	—
VENT #: 20	1.4	-0-	—	—
SUMP #: 3	0.0	0.0	—	—
VENT #: 22	0.9	0.2	—	—
VENT #: 18	0.2	0.0	—	—
VENT #: 8	2.2	0.0	—	—
VENT #: 2	0.9	0.6	—	—
VENT #: 24	1.2	0.2	—	—
SUMP #: 2	0.0	0.0	—	—
VENT #: 23	2.8	0.2	—	—
VENT #: 15	0.2	0.1	—	—
VENT #: 9	2.8	0.0	—	—
VENT #: 3	0.1	0.1	—	—
VENT #: 17	0.4	0.1	—	—
SUMP #: 1	0.2	0.0	—	—
VENT #: 13	2.2	0.1	—	—
VENT #: 19	0.2	0.1	—	—
VENT #: 6	0.2	0.1	—	—
VENT #: 4	0.0	0.0	—	—
VENT #: 12	0.2	0.0	—	—
VENT #: 16	3.2	0.2	—	—
VENT #: 14	1.8	0.2	—	—
VENT #: 10	0.2	0.1	—	—
VENT #: 5	0.5	0.2	—	—
VENT #: 25	0.5	0.0	—	—

NT = NOT TAKEN

NA = NOT AVAILAB

Calibrations for: OVA 50990, HNU 801107, Exotox None, and NH3 None are on page 020 of the CAL logbook CMP1 dated 12-04-89.

ADDITIONAL COMMENTS: No Activity at waste pile. All sumps were open, No cover on them.

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F WASTE PILE VENTS

DATE: February 07, 1990 SAMPLER: [illegible signature]

START TIME: 0900 START ATMOS. PRESS.: 24.52 WS: 3.6 WD: SW→NE TEMP: 42 °F

END TIME: 1025 MST END ATMOS. PRESS.: 24.49 WS: 10.9 WD: SW→NE TEMP: 53 °F

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop throughout the sample period. Take sample 1" below vent opening.

	VENT #: 1	VENT #: 11	VENT #: 7	VENT #: 21	VENT #: 20
OVA	6.5	3.6	1.1	2.6	7.0
HNU	0.3	0.2	-0-	0.1	-0-
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	VENT #: 22	VENT #: 18	VENT #: 8	VENT #: 2	VENT #: 24
OVA	3.5	2.1	7.0	1.6	2.8
HNU	0.2	0.1	0.1	-0-	2.0
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	VENT #: 23	VENT #: 15	VENT #: 9	VENT #: 3	VENT #: 17
OVA	7.8	0.3	10.3	0.7	1.2
HNU	0.6	0.1	0.2	0.2	0.2
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	VENT #: 13	VENT #: 19	VENT #: 6	VENT #: 4	VENT #: 12
OVA	2.3	0.6	0.9	0.5	0.2
HNU	0.3	0.2	0.0	0.0	-0-
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	VENT #: 16	VENT #: 14	VENT #: 10	VENT #: 5	VENT #: 25
OVA	5.3	2.8	0.8	2.8	1.2
HNU	0.3	0.0	0.1	-0-	0.1
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	SUMP #: 3	SUMP #: 2	SUMP #: 1
OVA	0.8	0.5	0.4
HNU	0.0	0.0	0.1
H2S	-0-	-0-	-0-
NH3	-0-	-0-	-0-

NT = NOT TAKEN

NA = NOT AVAILAB

Calibrations for: OVA 37990, HNU 801147, Exotox 664495, and NH3 Factory Calibrated are on page 23 of the CAL logbook Cal logbook 1 dated 02-07-90.

ADDITIONAL COMMENTS: Sumps #1 and 2 were covered with lids. Stand Pipe vents looked good - straight up and down

PRIVILEGED INFORMATION
PREPARED IN SUPPORT OF LITIGATION

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE VENTS

DATE: 05-22-90 SAMPLER: [signature]

START TIME: 1030 MST START ATMOS. PRESS.: 24.7 WS: 2mph WD: EEN TEMP: 75 °F

END TIME: 1230 MST END ATMOS. PRESS.: 24.64 WS: 8mph WD: EEN TEMP: 81 °F

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop throughout the sample period. Take sample 1" below vent opening.

	OVA	HNU	H2S	NH3
VENT #: 1	2.4	0.2	—	0.0
VENT #: 11	1.8	0.1	—	0.0
VENT #: 7	1.0	0.1	—	0.0
VENT #: 21	6.0	0.0	—	0.0
VENT #: 20	6.8	0.1	—	0.0
VENT #: 22	1.6	0.2	—	0.0
VENT #: 18	0.4	0.0	—	0.0
VENT #: 8	5.4	0.0	—	0.0
VENT #: 2	0.4	0.0	—	0.0
VENT #: 24	5.4	0.2	—	0.0
VENT #: 23	6.8	0.6	—	0.0
VENT #: 15	0.4	0.2	—	0.0
VENT #: 9	6.8	0.1	—	0.0
VENT #: 3	0.8	0.2	—	0.0
VENT #: 17	4.9	0.4	—	0.0
VENT #: 13	1.6	0.3	—	0.0
VENT #: 19	1.6	0.2	—	0.0
VENT #: 6	0.6	0.0	—	0.0
VENT #: 4	0.4	0.1	—	0.0
VENT #: 12	2.8	0.4	—	0.0
VENT #: 16	5.2	0.1	—	0.0
VENT #: 14	3.4	0.3	—	0.0
VENT #: 10	2.8	0.2	—	0.0
VENT #: 5	44.0	0.6	—	0.0
VENT #: 25	11.0	1.2	—	0.0
SUMP #: 3				
SUMP #: 2				
SUMP #: 1				

NT = NOT TAKEN

NA = NOT AVAILAB

Calibrations for: OVA 50950, HNU 801143, Exotox ______, and NH3 Hand Pump are on page 032 of the CAL logbook #1 dated 05-22-90.

ADDITIONAL COMMENTS: Ground dry - Vent stacks looked normal. I got a good whiff of the basin F smell at vent #25 - This was also the highest HNU reading.

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE VENTS

DATE: July 16-1990 SAMPLER: [illegible]

START TIME: 1120 MST START ATMOS. PRESS.: 24.70 WS: 0-5mph WD: E to W TEMP: 85 °F

END TIME: 1235 MST END ATMOS. PRESS.: 24.68 WS: 2-7mph WD: E to W TEMP: 85 °F

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop through out the sample period. Take sample 1" below vent opening.

VENT #: 1	VENT #: 11	VENT #: 7	VENT #: 21	VENT #: 20
OVA: 6.8	OVA: 0.6	OVA: 1.2	OVA: 0.6	OVA: 7.2
HNU: 0.2	HNU: 0.0	HNU: 0.0	HNU: 0.0	HNU: 0.1
H2S: —	H2S: —	H2S:	H2S: —	H2S: —
NH3: -0-	NH3: -0-	NH3:	NH3: -0-	NH3: -0-

VENT #: 22	VENT #: 18	VENT #: 8	VENT #: 2	VENT #: 24
OVA: 1.9	OVA: 0.0	OVA: 0.7	OVA: 0.0	OVA: 0.2
HNU: 0.2	HNU: 0.0	HNU: 0.0	HNU: 0.0	HNU: 0.0
H2S: —	H2S: —	H2S:	H2S: —	H2S: —
NH3: -0-	NH3: -0-	NH3:	NH3: -0-	NH3: -0-

VENT #: 23	VENT #: 15	VENT #: 9	VENT #: 3	VENT #: 17
OVA: 3.6	OVA: 0.9	OVA: 7.4	OVA: 1.8	OVA: 0.0
HNU: 0.0	HNU: 0.0	HNU: 0.2	HNU: 0.1	HNU: 0.0
H2S: —	H2S: —	H2S:	H2S: —	H2S: —
NH3: -0-	NH3: -0-	NH3:	NH3: -0-	NH3: -0-

VENT #: 13	VENT #: 19	VENT #: 6	VENT #: 4	VENT #: 12
OVA: 4.3	OVA: 1.6	OVA: 0.0	OVA: 0.9	OVA: 0.1
HNU: 0.3	HNU: 0.0	HNU: 0.0	HNU: 0.0	HNU: 0.0
H2S: -0-	H2S: —	H2S:	H2S: —	H2S: —
NH3: -0-	NH3: -0-	NH3:	NH3: -0-	NH3: -0-

VENT #: 16	VENT #: 14	VENT #: 10	VENT #: 5	VENT #: 25
OVA: 14.0	OVA: 0.0	OVA: 0.0	OVA: 6.4	OVA: 2.4
HNU: 0.2	HNU: 0.0	HNU: 0.0	HNU: 0.1	HNU: 0.1
H2S: —	H2S: —	H2S:	H2S: —	H2S: —
NH3: -0-	NH3: -0-	NH3:	NH3: -0-	NH3: -0-

SUMP #: 3	SUMP #: 2	SUMP #: 1
OVA: 0.0	OVA: 0.0	OVA: 0.3
HNU: 0.0	HNU: 0.0	HNU: 0.1
H2S: —	H2S: —	H2S: —
NH3: -0-	NH3: -0-	NH3: -0-
covered	covered	

NT = NOT TAKEN

NA = NOT AVAILAB

Calibrations for: OVA 50990, HNU 801143, Exotox ———, and NH3 Hand Pump Cal at Factory

are on page 036 of the CAL logbook CMP 1 dated 07-16-90.

ADDITIONAL COMMENTS: Top looks good - All weeds & grass mowed. No sagging spots noticed

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE VENTS

DATE: 05-22-90 SAMPLER: [signature]

START TIME: 1030 MST START ATMOS. PRESS.: 24.7 WS: 2mph WD: EEN TEMP: 75 °F

END TIME: 1230 MST END ATMOS. PRESS.: 24.64 WS: 8mph WD: EEN TEMP: 81 °F

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop throughout the sample period. Take sample 1" below vent opening.

VENT #: 1	VENT #: 11	VENT #: 7	VENT #: 21	VENT #: 20
OVA: 2.4	OVA: 1.8	OVA: 1.0	OVA: 6.0	OVA: 6.8
HNU: 0.2	HNU: 0.1	HNU: 0.1	HNU: 0.0	HNU: 0.1
H2S: —	H2S: —	H2S: —	H2S: —	H2S: —
NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0

VENT #: 22	VENT #: 18	VENT #: 8	VENT #: 2	VENT #: 24
OVA: 1.6	OVA: 0.4	OVA: 5.4	OVA: 0.4	OVA: 5.4
HNU: 0.2	HNU: 0.0	HNU: 0.0	HNU: 0.0	HNU: 0.2
H2S: —	H2S: —	H2S: —	H2S: —	H2S: —
NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0

VENT #: 23	VENT #: 15	VENT #: 9	VENT #: 3	VENT #: 17
OVA: 6.8	OVA: 0.4	OVA: 6.8	OVA: 0.8	OVA: 4.9
HNU: 0.6	HNU: 0.2	HNU: 0.1	HNU: 0.2	HNU: 0.4
H2S: —	H2S: —	H2S: —	H2S: —	H2S: —
NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0

VENT #: 13	VENT #: 19	VENT #: 6	VENT #: 4	VENT #: 12
OVA: 1.6	OVA: 1.6	OVA: 0.6	OVA: 0.4	OVA: 2.8
HNU: 0.3	HNU: 0.2	HNU: 0.0	HNU: 0.1	HNU: 0.4
H2S: —	H2S: —	H2S: —	H2S: —	H2S: —
NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0

VENT #: 16	VENT #: 14	VENT #: 10	VENT #: 5	VENT #: 25
OVA: 5.2	OVA: 3.4	OVA: 2.8	OVA: 44.0	OVA: 11.0
HNU: 0.1	HNU: 0.3	HNU: 0.2	HNU: 0.6	HNU: 1.2
H2S: —	H2S: —	H2S: —	H2S: —	H2S: —
NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0	NH3: 0.0

SUMP #: 3	SUMP #: 2	SUMP #: 1
OVA:	OVA:	OVA:
HNU:	HNU:	HNU:
H2S:	H2S:	H2S:
NH3:	NH3:	NH3:

NT = NOT TAKEN

NA = NOT AVAILAB

Calibrations for: OVA 50950, HNU 801143, Exotox ____, and NH3 Hand Pump are on page 032 of the CAL logbook #1 dated 05-22-90.

ADDITIONAL COMMENTS: Ground dry - Vent stacks looked normal. I got a good whiff of the basin F smell at vent #25 - This was also the highest HNU reading.

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET
BASIN-F WASTE PILE VENTS

DATE: 08-15-90 SAMPLER: [illegible]

START TIME: 1335 START ATMOS. PRESS.: 24.74 WS: 8.93 WD: E TEMP: 75 °F

END TIME: 1500 END ATMOS. PRESS.: 24.72 WS: 8.11 WD: E TEMP: 74.4 °F

NOTE: Take sample only when atmospheric pressure is dropping and continues to drop through out the sample period. Take sample 1" below vent opening.

	VENT #: 1	VENT #: 11	VENT #: 7	VENT #: 21	VENT #: 20
OVA	6.0	0.4	11.0	2.8	10.0
HNU	0.0	0.0	0.2	0.0	-0-
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	VENT #: 22	VENT #: 18	VENT #: 8	VENT #: 2	VENT #: 24
OVA	6.4	0.3	8.0	0.5	5.2
HNU	0.3	-0-	0.0	0.0	-0-
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	VENT #: 23	VENT #: 15	VENT #: 9	VENT #: 3	VENT #: 17
OVA	22	0.0	36	11.0	0.0
HNU	1.8	0.0	0.4	0.2	0.0
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	VENT #: 13	VENT #: 19	VENT #: 6	VENT #: 4	VENT #: 12
OVA	2.2	4.2	1.2	0.5	0.0
HNU	-0-	0.2	0.2	0.0	0.0
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	VENT #: 16	VENT #: 14	VENT #: 10	VENT #: 5	VENT #: 25
OVA	14	7.7	4.8	11.0	3.6
HNU	0.5	0.2	0.5	1.0	0.0
H2S	-0-	-0-	-0-	-0-	-0-
NH3	-0-	-0-	-0-	-0-	-0-

	SUMP #: 3	SUMP #: 2	SUMP #: 1
OVA	0.0	0.0	0.0
HNU	0.0	0.0	0.0
H2S	-0-	-0-	-0-
NH3	-0-	-0-	-0-

NT = NOT TAKEN

NA = NOT AVAILAB

Calibrations for: OVA 50500, HNU 801130, Exotox ______, and NH3 ______ are on page 40 of the CAL logbook CMP1 dated 08-15-90.

ADDITIONAL COMMENTS: These reading taken in conjunction with Cannister Sampling

Waste Pile Cap

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F WASTE PILE CAP

DATE: 15 June 89 SAMPLER: [illegible signature]

START TIME: 9:00 START ATMOS. PRESS.: 24.8 WS: 3 mph WD: WNW TEMP: 58 °F

END TIME: 11:10 END ATMOS. PRESS.: 24.75 WS: 4 mph WD: E TEMP: 70 °F

NOTE: Take sample only when wind speed is less than 10 mph. Take samples 2 to 3 inches above ground.

14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-1
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-2	13-2	12-2	11-2	10-2	9-2	8-2	7-2	6-2	5-2	4-2	3-2	2-2	1-2
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-3	13-3	12-3	11-3	10-3	9-3	8-3	7-3	6-3	5-3	4-3	3-3	2-3	1-3
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-4	13-4	12-4	11-4	10-4	9-4	8-4	7-4	6-4	5-4	4-4	3-4	2-4	1-4
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-5	13-5	12-5	11-5	10-5	9-5	8-5	7-5	6-5	5-5	4-5	3-5	2-5	1-5
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-6	13-6	12-6	11-6	10-6	9-6	8-6	7-6	6-6	5-6	4-6	3-6	2-6	1-6
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-7	13-7	12-7	11-7	10-7	9-7	8-7	7-7	6-7	5-7	4-7	3-7	2-7	1-7
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-8	13-8	12-8	11-8	10-8	9-8	8-8	7-8	6-8	5-8	4-8	3-8	2-8	1-8
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-9	13-9	12-9	11-9	10-9	9-9	8-9	7-9	6-9	5-9	4-9	3-9	2-9	1-9
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0

Calibrations for: OVA 50990, and HNU 80-1078 are on page 5 of the CAL logbook dated Cmpl dated 15 June 1989.

ADDITIONAL COMMENTS: Nothing unusual Noted.

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE CAP

PRIVILEGED INFORMATION
PREPARED IN SUPPORT OF LITIGATION

DATE: July 11, 1989 SAMPLER: Jackl Geist

START TIME: 0820 START ATMOS. PRESS.: 24.83 WS: 3 mph WD: WSW TEMP: 71 °F

END TIME: ~~0~~ 1015 END ATMOS. PRESS.: 24.83 WS: 5 mph WD: NNW TEMP: 80 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-1
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-2	13-2	12-2	11-2	10-2	9-2	8-2	7-2	6-2	5-2	4-2	3-2	2-2	1-2
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-3	13-3	12-3	11-3	10-3	9-3	8-3	7-3	6-3	5-3	4-3	3-3	2-3	1-3
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-4	13-4	12-4	11-4	10-4	9-4	8-4	7-4	6-4	5-4	4-4	3-4	2-4	1-4
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-5	13-5	12-5	11-5	10-5	9-5	8-5	7-5	6-5	5-5	4-5	3-5	2-5	1-5
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-6	13-6	12-6	11-6	10-6	9-6	8-6	7-6	6-6	5-6	4-6	3-6	2-6	1-6
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-7	13-7	12-7	11-7	10-7	9-7	8-7	7-7	6-7	5-7	4-7	3-7	2-7	1-7
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-8	13-8	12-8	11-8	10-8	9-8	8-8	7-8	6-8	5-8	4-8	3-8	2-8	1-8
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0
14-9	13-9	12-9	11-9	10-9	9-9	8-9	7-9	6-9	5-9	4-9	3-9	2-9	1-9
O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0	O 0.0
H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0	H 0.0

Calibrations for: OVA 50990, and HNU 801143 are on page 7 of the CAL logbook CMP 1.

ADDITIONAL COMMENTS: The grass is 25% to 50% brown - small cracks all over the waste pile - probably due to lack of water.

ised 6-15-89

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F WASTE PILE CAP

DATE: 14 August SAMPLER: Jack N Geist

START TIME: 1100 MST START ATMOS. PRESS.: 24.83 WS: 3mph WD: SSW TEMP: 81 °F

END TIME: 1345 MST END ATMOS. PRESS.: 24.78 WS: 6mph WD: SSW TEMP: 84 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	14-2	13-2	12-2	11-2	10-2	9-2	8-2	7-2	6-2	5-2	4-2	3-2	2-2	1-2
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	14-3	13-3	12-3	11-3	10-3	9-3	8-3	7-3	6-3	5-3	4-3	3-3	2-3	1-3
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	14-4	13-4	12-4	11-4	10-4	9-4	8-4	7-4	6-4	5-4	4-4	3-4	2-4	1-4
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	14-5	13-5	12-5	11-5	10-5	9-5	8-5	7-5	6-5	5-5	4-5	3-5	2-5	1-5
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	14-6	13-6	12-6	11-6	10-6	9-6	8-6	7-6	6-6	5-6	4-6	3-6	2-6	1-6
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	14-7	13-7	12-7	11-7	10-7	9-7	8-7	7-7	6-7	5-7	4-7	3-7	2-7	1-7
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	14-8	13-8	12-8	11-8	10-8	9-8	8-8	7-8	6-8	5-8	4-8	3-8	2-8	1-8
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	14-9	13-9	12-9	11-9	10-9	9-9	8-9	7-9	6-9	5-9	4-9	3-9	2-9	1-9
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Calibrations for: OVA 50990, and HNU 801169 are on page 15 of the CAL logbook cmpl.

ADDITIONAL COMMENTS:

sed 6-15-89

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F WASTE PILE CAP

DATE: 09/19/89 SAMPLER: [signature]

START TIME: 1145 START ATMOS. PRESS.: 24.71 WS: <5mph WD: NNW TEMP: 70 °F

END TIME: 1315 END ATMOS. PRESS.: 24.69 WS: <5mph WD: NNW TEMP: 70 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-
-0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
-0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-2	13-2	12-2	11-2	10-2	9-2	8-2	7-2	6-2	5-2	4-2	3-2	2-2	1-
-0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
-0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-3	13-3	12-3	11-3	10-3	9-3	8-3	7-3	6-3	5-3	4-3	3-3	2-3	1-
-0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
-0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-4	13-4	12-4	11-4	10-4	9-4	8-4	7-4	6-4	5-4	4-4	3-4	2-4	1-
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-5	13-5	12-5	11-5	10-5	9-5	8-5	7-5	6-5	5-5	4-5	3-5	2-5	1-
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-6	13-6	12-6	11-6	10-6	9-6	8-6	7-6	6-6	5-6	4-6	3-6	2-6	1-
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-7	13-7	12-7	11-7	10-7	9-7	8-7	7-7	6-7	5-7	4-7	3-7	2-7	1-
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-8	13-8	12-8	11-8	10-8	9-8	8-8	7-8	6-8	5-8	4-8	3-8	2-8	1
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-9	13-9	12-9	11-9	10-9	9-9	8-9	7-9	6-9	5-9	4-9	3-9	2-9	1
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-

Calibrations for: OVA_______, and HNU_______ are on page 17 of the CAL logbook Camp 1.

ADDITIONAL COMMENTS: Cracks caused by dryness - weeds growing good, grass appears dead. No sunken spots observed - All appeared in good shape.

ised 6-15 89

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE CAP

DATE: 01-04-90 SAMPLER: Jack W Gust

START TIME: 1230 MST START ATMOS. PRESS.: 24.74 WS: 2.9 WD: NNW TEMP: 30 °F

END TIME: 1350 MST END ATMOS. PRESS.: 24.70 WS: 2.9 WD: NNE TEMP: 32 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-2	**13-2**	**12-2**	**11-2**	**10-2**	**9-2**	**8-2**	**7-2**	**6-2**	**5-2**	**4-2**	**3-2**	**2-2**	**1-**
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H	H -0-
14-3	**13-3**	**12-3**	**11-3**	**10-3**	**9-3**	**8-3**	**7-3**	**6-3**	**5-3**	**4-3**	**3-3**	**2-3**	**1-**
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-4	**13-4**	**12-4**	**11-4**	**10-4**	**9-4**	**8-4**	**7-4**	**6-4**	**5-4**	**4-4**	**3-4**	**2-4**	**1-**
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-5	**13-5**	**12-5**	**11-5**	**10-5**	**9-5**	**8-5**	**7-5**	**6-5**	**5-5**	**4-5**	**3-5**	**2-5**	**1-**
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-6	**13-6**	**12-6**	**11-6**	**10-6**	**9-6**	**8-6**	**7-6**	**6-6**	**5-6**	**4-6**	**3-6**	**2-6**	**1-**
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-7	**13-7**	**12-7**	**11-7**	**10-7**	**9-7**	**8-7**	**7-7**	**6-7**	**5-7**	**4-7**	**3-7**	**2-7**	**1-**
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-8	**13-8**	**12-8**	**11-8**	**10-8**	**9-8**	**8-8**	**7-8**	**6-8**	**5-8**	**4-8**	**3-8**	**2-8**	**1-**
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-
14-9	**13-9**	**12-9**	**11-9**	**10-9**	**9-9**	**8-9**	**7-9**	**6-9**	**5-9**	**4-9**	**3-9**	**2-9**	**1**
O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-	O -0-
H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-	H -0-

Calibrations for: OVA 50-589, and HNU 80-1078 are on page 21 of the CAL logbook book 1.

ADDITIONAL COMMENTS: Ground damp - 10% snow covered - Did not smell any detrimental odors - Cap looks Good Jack W Gust

ised 6-15-89

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE CAP

DATE: 02-06-90 SAMPLER:

START TIME: 1100 MST START ATMOS. PRESS.: 24.63 WS: 4mph WD: E to W TEMP: 49 °F

END TIME: 1255 mst END ATMOS. PRESS.: 24.61 WS: 9mph WD: E to W TEMP: 49 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	14-2	13-2	12-2	11-2	10-2	9-2	8-2	7-2	6-2	5-2	4-2	3-2	2-2	1-
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	14-3	13-3	12-3	11-3	10-3	9-3	8-3	7-3	6-3	5-3	4-3	3-3	2-3	1-
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	14-4	13-4	12-4	11-4	10-4	9-4	8-4	7-4	6-4	5-4	4-4	3-4	2-4	1-
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	14-5	13-5	12-5	11-5	10-5	9-5	8-5	7-5	6-5	5-5	4-5	3-5	2-5	1-
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	14-6	13-6	12-6	11-6	10-6	9-6	8-6	7-6	6-6	5-6	4-6	3-6	2-6	1-
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	14-7	13-7	12-7	11-7	10-7	9-7	8-7	7-7	6-7	5-7	4-7	3-7	2-7	1-
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	14-8	13-8	12-8	11-8	10-8	9-8	8-8	7-8	6-8	5-8	4-8	3-8	2-8	1-
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	14-9	13-9	12-9	11-9	10-9	9-9	8-9	7-9	6-9	5-9	4-9	3-9	2-9	1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

Calibrations for: OVA 50990, and HNU 201019 are on page 22 of the CAL logbook Cal log book 1

ADDITIONAL COMMENTS: Ground wet and muddy. Surface of waste pile looked good- Did NOT Notice ANY SAGGING SPOTS.

PRIVILEGED INFORMATION
PREPARED IN SUPPORT OF LITIGATION

ed 6-15-89

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F WASTE PILE CAP

DATE: 05-02-90 SAMPLER: [illegible signature]

START TIME: 0810 START ATMOS. PRESS.: 24.64 WS: 5 mph WD: ES TEMP: 42 °F

END TIME: 0955 END ATMOS. PRESS.: 24.65 WS: 4 mph WD: ES TEMP: 47 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14-2	13-2	12-2	11-2	10-2	9-2	8-2	7-2	6-2	5-2	4-2	3-2	2-2	1-
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14-3	13-3	12-3	11-3	10-3	9-3	8-3	7-3	6-3	5-3	4-3	3-3	2-3	1-
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14-4	13-4	12-4	11-4	10-4	9-4	8-4	7-4	6-4	5-4	4-4	3-4	2-4	1-
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14-5	13-5	12-5	11-5	10-5	9-5	8-5	7-5	6-5	5-5	4-5	3-5	2-5	1-
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14-6	13-6	12-6	11-6	10-6	9-6	8-6	7-6	6-6	5-6	4-6	3-6	2-6	1-
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14-7	13-7	12-7	11-7	10-7	9-7	8-7	7-7	6-7	5-7	4-7	3-7	2-7	1-
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14-8	13-8	12-8	11-8	10-8	9-8	8-8	7-8	6-8	5-8	4-8	3-8	2-8	1
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	14-9	13-9	12-9	11-9	10-9	9-9	8-9	7-9	6-9	5-9	4-9	3-9	2-9	1
O	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Calibrations for: OVA 50990, and HNU 80-1143 are on page 028 of the CAL logbook cmpl.

ADDITIONAL COMMENTS: Waste Pile CAP looks good - NO spots seem to be sinks, [illegible] pipes are straight - Very few cracks in ground NOTICED

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F WASTE PILE CAP

DATE: 08-30-90 SAMPLER: [illegible]

START TIME: 1230 HRS START ATMOS. PRESS.: 24.69 WS: 9 WD: WS TEMP: 94 °F

END TIME: 1300 HRS END ATMOS. PRESS.: 24.66 WS: 7 WD: WS TEMP: 95 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	14-1	13-1	12-1	11-1	10-1	9-1	8-1	7-1	6-1	5-1	4-1	3-1	2-1	1-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	14-2	13-2	12-2	11-2	10-2	9-2	8-2	7-2	6-2	5-2	4-2	3-2	2-2	1-2
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	14-3	13-3	12-3	11-3	10-3	9-3	8-3	7-3	6-3	5-3	4-3	3-3	2-3	1-3
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	14-4	13-4	12-4	11-4	10-4	9-4	8-4	7-4	6-4	5-4	4-4	3-4	2-4	1-4
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	14-5	13-5	12-5	11-5	10-5	9-5	8-5	7-5	6-5	5-5	4-5	3-5	2-5	1-5
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	14-6	13-6	12-6	11-6	10-6	9-6	8-6	7-6	6-6	5-6	4-6	3-6	2-6	1-6
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	14-7	13-7	12-7	11-7	10-7	9-7	8-7	7-7	6-7	5-7	4-7	3-7	2-7	1-7
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	14-8	13-8	12-8	11-8	10-8	9-8	8-8	7-8	6-8	5-8	4-8	3-8	2-8	1-8
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
	14-9	13-9	12-9	11-9	10-9	9-9	8-9	7-9	6-9	5-9	4-9	3-9	2-9	1-9
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

Calibrations for: OVA 50590, and HNU 801143 are on page 42 of the CAL logbook 1.

ADDITIONAL COMMENTS: Surface Area looks natural - no sunken spots noticed. Sand Bags are almost no existant since the grass-weeds were mowed.

Tank and Pond Vents

EBASCO IRA-6 AIR MONITORING SAMPLING DATA SHEET BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: 2 June 89 SAMPLER: Jack D Guist

TIME: 9:50 A MST

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 1.6	OVA 120	OVA 400	OVA 63
HNU 0.6	HNU 0.8	HNU 32	HNU 6

WIND SPEED Slight

ZONE D-1 WIND DIRECTION EES OVA 0.0 HNU 0.0 (SAMPLE DOWN WIND OF POND-A)

TEMPERATURE NA °F

ADDITIONAL COMMENTS: dump pipe open - ova - 170 ppm - HNU - 6 ppm Could not get a steady reading on vents - All readings were spikes or pulsating.

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 2 June 89 SAMPLER: Jack D Guist

START TIME: 10:10 A MST START ATMOS. PRESS.: 24.75 WS: Slight WD: EES TEMP: N

FINISH TIME: 10:30 A MST FINISH ATMOS. PRESS.: ______ WS: ____ WD: ____ TEMP: __

WEST TANK	EAST TANK	SOUTH TANK
OVA ______	OVA ______	OVA ______
HNU ______	HNU ______	HNU ______

Calibrations for: OVA 50990, and HNU 801078, are on page 2 of the CAL logbook Comp 1 dated 2 June 89.

ADDITIONAL COMMENTS: CAN NOT REACH Vents with Current equipment - Vents are a good 8' from platform

**EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM**

POND-A LINER VENTS

DATE: ________ SAMPLER: ________
TIME: ________

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA ____	OVA ____	OVA ____	OVA ____
HNU ____	HNU ____	HNU ____	HNU ____

WIND SPEED ________

ZONE ____ WIND DIRECTION ________ OVA ________ HNU ________ (SAMPLE DOWN WIND OF POND-A)

TEMPERATURE ________ °F

ADDITIONAL COMMENTS: ________

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 5 June 1989 SAMPLER: Jack D. Fist

START TIME: 11:10 MST START ATMOS. PRESS.: 24.70 WS: 3.5 mph WD: NNE TEMP: 56

FINISH TIME: 11:40 MST FINISH ATMOS. PRESS.: 24.69 WS: 3 mph WD: ENE TEMP: 58

WEST TANK	EAST TANK	SOUTH TANK
OVA 0.2	OVA 0.4	OVA 0.1
HNU 0.0	HNU 0.0	HNU 0.0

Calibrations for: OVA 50990, and HNU 801078, are on page 3 of the CAL logbook Cmp 1 dated 5 June 1989

ADDITIONAL COMMENTS: Used 8' Extension Tube.

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: July 19, 1989 SAMPLER: Jack W Yeast
TIME: 1230

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 0.0	OVA 1.2	OVA 310	OVA 100
HNU 0.0	HNU 1.0	HNU 45	HNU 6.4

WIND SPEED 6 mph
ZONE D-1 WIND DIRECTION NNE OVA 0.0 HNU 0.0 (SAMPLE DOWN WIND OF POND-A)
TEMPERATURE 83 °F

ADDITIONAL COMMENTS: Breathing zone samples were zero with both the OVA and HNu.

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: July 19, 1989 SAMPLER: Jack W Yeast

START TIME: 1305 START ATMOS. PRESS.: 24.95 WS: 6mph WD: EES TEMP: 83

FINISH TIME: 1335 FINISH ATMOS. PRESS.: 24.92 WS: 6mph WD: EES TEMP: 83

WEST TANK	EAST TANK	SOUTH TANK
OVA 2.8	OVA 2.8	OVA 2.4
HNU 0.6	HNU 0.6	HNU 0.4

Calibrations for: OVA 50990, and HNU 801169, are on page 11 of the CAL logbook CMP 1 dated 7/19/89.

ADDITIONAL COMMENTS:

PRIVILEGED INFORMATION
PREPARED IN SUPPORT OF LITIGATION

vised 5-26-89

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: 08/24/89 SAMPLER: Jack W Guit

TIME: 1250 MST

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 1.8	OVA 2.8	OVA 200	OVA 70
HNU 0.2	HNU 2.2	HNU 110	HNU 7.0

WIND SPEED ~~E~~ 9 mph

ZONE E-2

WIND DIRECTION EEN

OVA 0.0 HNU 0.0 (SAMPLE DOWN WIND OF POND-A)

TEMPERATURE 89 °F

ADDITIONAL COMMENTS:

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 08/24/89 SAMPLER: Jack W Guit

START TIME: 1330 MST START ATMOS. PRESS.: 24.55 WS: 9mph WD: EEN TEMP: 89 °F

FINISH TIME: 1415 MST FINISH ATMOS. PRESS.: 24.49 WS: 10mph WD: EEN TEMP: 89 °F

WEST TANK	EAST TANK	SOUTH TANK
OVA 6.7	OVA 6.6	OVA 5.3
HNU 1.5	HNU 1.3	HNU 0.7

Calibrations for: OVA 50990, and HNU 801169, are on page 16 of the CAL logbook Cmp 1 dated 8/24/89.

ADDITIONAL COMMENTS:

vised 5-26-89

**EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM**

POND-A LINER VENTS

DATE: 09/27/89 SAMPLER: Jack W Gest

TIME: 1335

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 70.0	OVA 0.0	OVA 420	OVA 22
HNU 0.6	HNU 0.0	HNU 1.4	HNU 1.8

WIND SPEED <5 mp

ZONE B-1 WIND DIRECTION EEN OVA -0- HNU -0-
(SAMPLE DOWN WIND OF POND-A)

TEMPERATURE 80 °F

ADDITIONAL COMMENTS:

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: SAMPLER:

START TIME: 1355 START ATMOS. PRESS.: 24.85 WS: <5mph WD: EEN TEMP: 80°

FINISH TIME: 1420 FINISH ATMOS. PRESS.: 24.83 WS: <5mph WD: EEN TEMP: 80°

WEST TANK	EAST TANK	SOUTH TANK
OVA 2.1	OVA 2.2	OVA 1.8
HNU 0.3	HNU 0.4	HNU 0.2

Calibrations for: OVA 50973, and HNU 80-1078, are on page 19 of the CAL logbook #1 dated 09/27/89

ADDITIONAL COMMENTS:

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: 02-07-90 SAMPLER: Jack L Geist

TIME: 1100 MST

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 59	OVA 35.0	OVA 6.8	OVA 21
HNU 2.2	HNU 0.4	HNU 0.5	HNU 1.1

WIND SPEED 10 mph

ZONE 1C WIND DIRECTION S → N. OVA 0.0 HNU 0.0 (SAMPLE DOWN WIND OF POND-A)

TEMPERATURE 47 °F

ADDITIONAL COMMENTS: Top of Pond liner frozen over with Ice And snow. No wave action on the Pond

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 02-07-90 SAMPLER: Jack L Geist

START TIME: 1100 START ATMOS. PRESS.: 24.52 WS: ____ WD: ____ TEMP: ____°

FINISH TIME: ____ FINISH ATMOS. PRESS.: 24.49 WS: ____ WD: ____ TEMP: ____°

WEST TANK	EAST TANK	SOUTH TANK
OVA ____	OVA ____	OVA ____
HNU ____	HNU ____	HNU ____

Calibrations for: OVA 50990, and HNU 801147, are on page 23 of the CAL logbook book 1 dated 02-07-90

ADDITIONAL COMMENTS:

PRIVILEGED INFORMATION
PREPARED IN SUPPORT OF LITIGATION

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: 02-12-90 SAMPLER: Jack D Guest

TIME: 0900 → 0930 MST

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 310	OVA 0.0	OVA 1.4	OVA 7.7
HNU 0.7	HNU 0.0	HNU 0.2	HNU 0.4

WIND SPEED 5mph

ZONE A-3 WIND DIRECTION S→N OVA 0.0 HNU 0.0 (SAMPLE DOWN WIND OF POND-A)

TEMPERATURE 41 °F

ADDITIONAL COMMENTS: Thin layer of Ice over the Pond.

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 02-12-1990 SAMPLER: Jack D Guest

START TIME: 0945 START ATMOS. PRESS.: 24.59 WS: 5mph WD: S→N TEMP: 41 °

FINISH TIME: 1025 FINISH ATMOS. PRESS.: 24.59 WS: 8mph WD: S→N TEMP: 49 °

WEST TANK	EAST TANK	SOUTH TANK
OVA 1.6	OVA 1.2	OVA 3.6
HNU 0.5	HNU 0.2	HNU 0.5

Calibrations for: OVA 50990, and HNU 801143, are on page 24 of the CAL logbook 1 dated 2-12-90

ADDITIONAL COMMENTS:

PRIVILEGED INFORMATION
PREPARED IN SUPPORT OF LITIGATION

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: ~~05-30~~ 05-31-90 SAMPLER: Jack D Geist

TIME: 1020 HRS

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 1.2	OVA 510	OVA 540	OVA 34
HNU 0.4	HNU 4.6	HNU 7.2	HNU 9.2

WIND SPEED 4 mph

ZONE 1C WIND DIRECTION SW to NE OVA — 0 — HNU — —
(SAMPLE DOWN WIND OF POND-A)

TEMPERATURE 69 °F

ADDITIONAL COMMENTS:

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 05-31-90 SAMPLER: Jack D Geist

START TIME: 1025 Hrs START ATMOS. PRESS.: 24.60 WS: 3mph WD: N-S TEMP: 65 °

FINISH TIME: 1140 Hrs FINISH ATMOS. PRESS.: 24.55 WS: 3mph WD: N-S TEMP: 69 °

WEST TANK	EAST TANK	SOUTH TANK
OVA 92.0	OVA 7.4	OVA 114.0
HNU 0.8	HNU 0.5	HNU 0.8

Calibrations for: OVA 50990, and HNU 801143, are on page 033 of the CAL logbook 1 dated 05-30-90

ADDITIONAL COMMENTS: Strong smells were present at the top of the west tank and the South tank.

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: 07-16-90 SAMPLER: Jack W Jesil
TIME: 1410

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 0.0	OVA 0.3	OVA 66	OVA 110
HNU 0.0	HNU 0.0	HNU 1.2	HNU 0.6

WIND SPEED 2-9 mph

ZONE 1A WIND DIRECTION E to W. OVA -0- HNU 0 (SAMPLE DOWN WIND OF POND-A)

TEMPERATURE 90 °F

ADDITIONAL COMMENTS:

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 07-16-90 SAMPLER: Jack W Jesil

START TIME: 1420 MST START ATMOS. PRESS.: 24.68 WS: 2-7 mph WD: S→N TEMP: 89 °F

FINISH TIME: 1505 MST FINISH ATMOS. PRESS.: 24.67 WS: 2-7 mph WD: S→N TEMP: 89 °F

WEST TANK	EAST TANK	SOUTH TANK
OVA 42	OVA 28	OVA 22
HNU 0.6	HNU 0.2	HNU 0.2

Calibrations for: OVA 50990, and HNU 801143, are on page 036 of the CAL logbook Cmp 1 dated 07-16-90.

ADDITIONAL COMMENTS:

Restored Basin F Cap.

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F POND-A AND TANK FARM

POND-A LINER VENTS

DATE: ~~05-30~~ 05-31-90 SAMPLER: Jack D Geist
TIME: 1020 HRS

NORTH VENT	EAST VENT	SOUTH VENT	WEST VENT
OVA 1.2	OVA 510	OVA 540	OVA 34
HNU 0.4	HNU 4.6	HNU 7.2	HNU 9.2

WIND SPEED 4 mph

ZONE 1C WIND DIRECTION SW to NE OVA -0- HNU -- (SAMPLE DOWN WIND OF POND-A)

TEMPERATURE 69 °F

ADDITIONAL COMMENTS:

TANK FARM

NOTE: Monitor only when atmospheric pressure is dropping.

DATE: 05-31-90 SAMPLER: Jack D Geist

START TIME: 1025 HRS START ATMOS. PRESS.: 24.60 WS: 3 mph WD: N-S TEMP: 65 °

FINISH TIME: 1140 HRS FINISH ATMOS. PRESS.: 24.55 WS: 3 mph WD: N-S TEMP: 69 °

WEST TANK	EAST TANK	SOUTH TANK
OVA 92.0	OVA 7.4	OVA 114.0
HNU 0.8	HNU 0.5	HNU 0.8

Calibrations for: OVA 50990, and HNU 801143, are on page 033 of the CAL logbook 1 dated 05-30-90

ADDITIONAL COMMENTS: Strong smells were present at the top of the west tank and the South tank.

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 19 June 89 SAMPLER: [illegible signature]

START TIME: 0900 START ATMOS. PRESS.: 24.72 WS: 5 mph WD: SSW TEMP: 80 °F

END TIME: 1330 END ATMOS. PRESS.: 24.61 WS: 8 mph WD: SSE TEMP: 81 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	L-5	L-4	L-3	L-2	L-1
O	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0

	K-7	K-6	K-5	K-4	K-3	K-2	K-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	J-10	J-9	J-8	J-7	J-6	J-5	J-4	J-3	J-2	J-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	I-11	I-10	I-9	I-8	I-7	I-6	I-5	I-4	I-3	I-2	I-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	H-12	H-11	H-10	H-9	H-8	H-7	H-6	H-5	H-4	H-3	H-2	H-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	G-11	G-10	G-9	G-8	G-7	G-6	G-5	G-4	G-3	G-2	G-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	F-11	F-10	F-9	F-8	F-7	F-6	F-5	F-4	F-3	F-2	F-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	E-11	E-10	E-9	E-8	E-7	E-6	E-5	E-4	E-3	E-2	E-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	D-9	D-8	D-7	D-6	D-5	D-4	D-3	D-2	D-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	C-7	C-6	C-5	C-4	C-3	C-2	C-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 19 June 88 SAMPLER: Jack O Quist

	B-10	B-9	B-8	B-7	B-6	B-5	B-4	B-3	B-2	B-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	A-11	A-10	A-9	A-8	A-7	A-6	A-5	A-4	A-3	A-2	A-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Calibrations for :OVA 50990, and HNU 801078, are on page 6 of CAL logbook Comp 1.

Additional Comments: No "Hot spots" recorded. Nothing unusual noted.

) = OVA
: = HNU
= Wind Speed
= Wind Direction

BASIN-F RESTORED BASIN

DATE: July 12, 1984 SAMPLER: Jack W Guest

START TIME: 0820 START ATMOS. PRESS.: 24.97 WS: <7mph WD: SSW TEMP: 67 °F

END TIME: 1330 END ATMOS. PRESS.: 24.94 WS: 9mph WD: SSW TEMP: 72 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	L-5	L-4	L-3	L-2	L-1
O	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0

	K-7	K-6	K-5	K-4	K-3	K-2	K-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	J-10	J-9	J-8	J-7	J-6	J-5	J-4	J-3	J-2	J-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	I-11	I-10	I-9	I-8	I-7	I-6	I-5	I-4	I-3	I-2	I-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	H-12	H-11	H-10	H-9	H-8	H-7	H-6	H-5	H-4	H-3	H-2	H-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	G-11	G-10	G-9	G-8	G-7	G-6	G-5	G-4	G-3	G-2	G-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	F-11	F-10	F-9	F-8	F-7	F-6	F-5	F-4	F-3	F-2	F-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	E-11	E-10	E-9	E-8	E-7	E-6	E-5	E-4	E-3	E-2	E-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	D-9	D-8	D-7	D-6	D-5	D-4	D-3	D-2	D-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	C-7	C-6	C-5	C-4	C-3	C-2	C-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DATE: July 12, 1989 SAMPLER: Jack O Guest

PRIVILEGED INFORMATION
PREPARED IN SUPPORT OF LITIGATION

	B-10	B-9	B-8	B-7	B-6	B-5	B-4	B-3	B-2	B-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	A-11	A-10	A-9	A-8	A-7	A-6	A-5	A-4	A-3	A-2	A-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Calibrations for :OVA 50990, and HNU 801153, are on page 8 of CAL logbook Cmp1.

Additional Comments: Surface of the ground has cracks ~~it~~ over in it due from dryness. The grass is 25% to 50% brown.

O = OVA
H = HNU
= Wind Speed
= Wind Direction

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 08/10/89 SAMPLER: Jack Geist & Dean W L

START TIME: 0800 MST START ATMOS. PRESS.: 24.76 WS: 3mph WD: NNW TEMP: 73 °F

END TIME: 1100 MST END ATMOS. PRESS.: 24.77 WS: 10mph WD: NNW TEMP: 81° °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	L-5	L-4	L-3	L-2	L-1
O	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0

	K-7	K-6	K-5	K-4	K-3	K-2	K-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	J-10	J-9	J-8	J-7	J-6	J-5	J-4	J-3	J-2	J-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	I-11	I-10	I-9	I-8	I-7	I-6	I-5	I-4	I-3	I-2	I-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	H-12	H-11	H-10	H-9	H-8	H-7	H-6	H-5	H-4	H-3	H-2	H-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	G-11	G-10	G-9	G-8	G-7	G-6	G-5	G-4	G-3	G-2	G-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	F-11	F-10	F-9	F-8	F-7	F-6	F-5	F-4	F-3	F-2	F-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	E-11	E-10	E-9	E-8	E-7	E-6	E-5	E-4	E-3	E-2	E-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	D-9	D-8	D-7	D-6	D-5	D-4	D-3	D-2	D-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	C-7	C-6	C-5	C-4	C-3	C-2	C-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 08/10/89 SAMPLER: Jack O Gest

	B-10	B-9	B-8	B-7	B-6	B-5	B-4	B-3	B-2	B-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	A-11	A-10	A-9	A-8	A-7	A-6	A-5	A-4	A-3	A-2	A-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

alibrations for :OVA 50990, and HNU 801078, are on page 14 of CAL logbook CMP1.

Additional Comments: Grass is turning green again - Not many (dry) cracks in surface area - Lots of fallen dust on my equipment at the end of the survey.

) = OVA
= HNU
= Wind Speed
= Wind Direction

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 09/21/89 SAMPLER: [illegible]

START TIME: 0910 START ATMOS. PRESS.: 24.86 WS: ≤5mph WD: NNE TEMP: 50 °F

END TIME: 1325 END ATMOS. PRESS.: 24.85 WS: 5mph WD: NNE TEMP: 60 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1
L								L-5 O 0.0 H 0.0	L-4 O 0.0 H 0.0	L-3 O 0.0 H 0.0	L-2 O 0.0 H 0.0	L-1 O 0.0 H 0.0
K						K-7 O 0.0 H 0.0	K-6 O 0.0 H 0.0	K-5 O 0.0 H 0.0	K-4 O 0.0 H 0.0	K-3 O 0.0 H 0.0	K-2 O 0.0 H 0.0	K-1 O 0.0 H 0.0
J			J-10 O 0.0 H 0.0	J-9 O 0.0 H 0.0	J-8 O 0.0 H 0.0	J-7 O 0.0 H 0.0	J-6 O 0.0 H 0.0	J-5 O 0.0 H 0.0	J-4 O 0.0 H 0.0	J-3 O 0.0 H 0.0	J-2 O 0.0 H 0.0	J-1 O 0.0 H 0.0
I		I-11 O 0.0 H 0.0	I-10 O 0.0 H 0.0	I-9 O 0.0 H 0.0	I-8 O 0.0 H 0.0	I-7 O 0.0 H 0.0	I-6 O 0.0 H 0.0	I-5 O 0.0 H 0.0	I-4 O 0.0 H 0.0	I-3 O 0.0 H 0.0	I-2 O 0.0 H 0.0	I-1 O 0.0 H 0.0
H	H-12 O 0.0 H 0.0	H-11 O 0.0 H 0.0	H-10 O 0.0 H 0.0	H-9 O 0.0 H 0.0	H-8 O 0.0 H 0.0	H-7 O 0.0 H 0.0	H-6 O 0.0 H 0.0	H-5 O 0.0 H 0.0	H-4 O 0.0 H 0.0	H-3 O 0.0 H 0.0	H-2 O 0.0 H 0.0	H-1 O 0.0 H 0.0
G		G-11 O 0.0 H 0.0	G-10 O 0.0 H 0.0	G-9 O 0.0 H 0.0	G-8 O 0.0 H 0.0	G-7 O 0.0 H 0.0	G-6 O 0.0 H 0.0	G-5 O 0.0 H 0.0	G-4 O 0.0 H 0.0	G-3 O 0.0 H 0.0	G-2 O 0.0 H 0.0	G-1 O 0.0 H 0.0
F		F-11 O 0.0 H 0.0	F-10 O 0.0 H 0.0	F-9 O 0.0 H 0.0	F-8 O 0.0 H 0.0	F-7 O 0.0 H 0.0	F-6 O 0.0 H 0.0	F-5 O 0.0 H 0.0	F-4 O 0.0 H 0.0	F-3 O 0.0 H 0.0	F-2 O 0.0 H 0.0	F-1 O 0.0 H 0.0
E		E-11 O 0.0 H 0.0	E-10 O 0.0 H 0.0	E-9 O 0.0 H 0.0	E-8 O 0.0 H 0.0	E-7 O 0.0 H 0.0	E-6 O 0.0 H 0.0	E-5 O 0.0 H 0.0	E-4 O 0.0 H 0.0	E-3 O 0.0 H 0.0	E-2 O 0.0 H 0.0	E-1 O 0.0 H 0.0
D				D-9 O 0.0 H 0.0	D-8 O 0.0 H 0.0	D-7 O 0.0 H 0.0	D-6 O 0.0 H 0.0	D-5 O 0.0 H 0.0	D-4 O 0.0 H 0.0	D-3 O 0.0 H 0.0	D-2 O 0.0 H 0.0	D-1 O 0.0 H 0.0
C						C-7 O 0.0 H 0.0	C-6 O 0.0 H 0.0	C-5 O 0.0 H 0.0	C-4 O 0.0 H 0.0	C-3 O 0.0 H 0.0	C-2 O 0.0 H 0.0	C-1 O 0.0 H 0.0

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: September 21, 1989 SAMPLER: Jack D Gust

	B-10	B-9	B-8	B-7	B-6	B-5	B-4	B-3	B-2	B-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

	A-11	A-10	A-9	A-8	A-7	A-6	A-5	A-4	A-3	A-2	A-1
O	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

alibrations for :OVA 50-977, and HNU 801078, are on page 18 of CAL logbook Cal Logbook 1

Additional Comments: Normal dry cracks in the soil, weeds growing good, grass is still green. Did not see any sunken spots. All looks good.

= OVA
= HNU
= Wind Speed
= Wind Direction

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 03-05-90 SAMPLER: [illegible]

START TIME: 1100 MST START ATMOS. PRESS.: 24.53 WS: 2mph WD: W→E TEMP: 45 °F

END TIME: 1345 MST END ATMOS. PRESS.: 24.45 WS: 3mph WD: W→E TEMP: 52 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	L-5	L-4	L-3	L-2	L-1
O	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-

	K-7	K-6	K-5	K-4	K-3	K-2	K-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	J-10	J-9	J-8	J-7	J-6	J-5	J-4	J-3	J-2	J-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	I-11	I-10	I-9	I-8	I-7	I-6	I-5	I-4	I-3	I-2	I-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	H-12	H-11	H-10	H-9	H-8	H-7	H-6	H-5	H-4	H-3	H-2	H-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	G-11	G-10	G-9	G-8	G-7	G-6	G-5	G-4	G-3	G-2	G-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	F-11	F-10	F-9	F-8	F-7	F-6	F-5	F-4	F-3	F-2	F-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	E-11	E-10	E-9	E-8	E-7	E-6	E-5	E-4	E-3	E-2	E-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	D-9	D-8	D-7	D-6	D-5	D-4	D-3	D-2	D-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	C-7	C-6	C-5	C-4	C-3	C-2	C-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 03-05-90 SAMPLER:

	B-10	B-9	B-8	B-7	B-6	B-5	B-4	B-3	B-2	B-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	A-11	A-10	A-9	A-8	A-7	A-6	A-5	A-4	A-3	A-2	A-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

Calibrations for :OVA 50990, and HNU 801019, are on page 25 of CAL logbook book 1.

Additional Comments: Ground dry - did not smell any unusual odors. Restored basin area cap look good.

) = OVA
= HNU
= Wind Speed
= Wind Direction

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 06-14-90 SAMPLER: [signature]

START TIME: 1000 HRS START ATMOS. PRESS.: 24.72 WS: 2 mph WD: VAR TEMP: 69 °F

END TIME: 1410 HRS END ATMOS. PRESS.: 24.65 WS: 7 mph WD: VAR TEMP: 79 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	L-5	L-4	L-3	L-2	L-1
O	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-

	K-7	K-6	K-5	K-4	K-3	K-2	K-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	J-10	J-9	J-8	J-7	J-6	J-5	J-4	J-3	J-2	J-1
O	-0-	-0-	---	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	I-11	I-10	I-9	I-8	I-7	I-6	I-5	I-4	I-3	I-2	I-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	H-12	H-11	H-10	H-9	H-8	H-7	H-6	H-5	H-4	H-3	H-2	H-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	G-11	G-10	G-9	G-8	G-7	G-6	G-5	G-4	G-3	G-2	G-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	F-11	F-10	F-9	F-8	F-7	F-6	F-5	F-4	F-3	F-2	F-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	E-11	E-10	E-9	E-8	E-7	E-6	E-5	E-4	E-3	E-2	E-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	D-9	D-8	D-7	D-6	D-5	D-4	D-3	D-2	D-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	C-7	C-6	C-5	C-4	C-3	C-2	C-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 06-14-90 SAMPLER: [illegible]

	B-10	B-9	B-8	B-7	B-6	B-5	B-4	B-3	B-2	B-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	A-11	A-10	A-9	A-8	A-7	A-6	A-5	A-4	A-3	A-2	A-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

Calibrations for :OVA 50990, and HNU #1143, are on page 38 of CAL logbook #1.

Additional Comments: Weeds and grass very tall - Hard to really see surface area. Did not smell anything detrimental

O = OVA
H = HNU
S = Wind Speed
D = Wind Direction

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: 08-30-90 SAMPLER: [signature]

START TIME: 0830 HRS START ATMOS. PRESS.: 24.72 WS: 8mph WD: WtoS TEMP: 79 °F

END TIME: 1145 END ATMOS. PRESS.: 24.68 WS: 5mph WD: WtoS TEMP: 94 °F

NOTE: Take sample only when wind speed is 10 mph or less. Take samples 2 to 3 inches above ground.

	12	11	10	9	8	7	6	5	4	3	2	1
L O								-0-	-0-	-0-	-0-	-0-
L H								-0-	-0-	-0-	-0-	-0-
K O						-0-	-0-	-0-	-0-	-0-	-0-	-0-
K H						-0-	-0-	-0-	-0-	-0-	-0-	-0-
J O			-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
J H			-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
I O		-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
I H		-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
G O		-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
G H		-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
F O		-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
F H		-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
E O		-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
E H		-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
D O				-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
D H				-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
C O						-0-	-0-	-0-	-0-	-0-	-0-	-0-
C H						-0-	-0-	-0-	-0-	-0-	-0-	-0-

EBASCO IRA-6 AIR MONITORING
SAMPLING DATA SHEET
BASIN-F RESTORED BASIN

DATE: Aug 30, 1990 SAMPLER: Jack D. [illegible]

	B-10	B-9	B-8	B-7	B-6	B-5	B-4	B-3	B-2	B-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

	A-11	A-10	A-9	A-8	A-7	A-6	A-5	A-4	A-3	A-2	A-1
O	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
H	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-

Calibrations for :OVA 50990 and HNU 801143 are on page 42 of CAL logbook 1.

Additional Comments: Sand bag Markers are just about non-existant since the grass-weeds were mowed. Surface area looks good.

O = OVA
H = HNU
S = Wind Speed
D = Wind Direction

Appendix D

IRA-F Flux Chamber Sampling

Subcontractor Data Summary

Flux calculation from VOC compounds detected by GC-FID ($\mu g\ m^{-2}\ min^{-1}$).

Compound	SITE 1 Episode 1	SITE 1 Episode 2	SITE 1 Episode 3	SITE 1 MEAN	SITE 1 STD
t-2-butene					
c-2-butene					
i-pentane					
1-pentene					
3-methyl-1-butene					
n-pentane		0.05	0.03	0.03	0.02
isoprene		0.07	0.01	0.03	0.03
t-2-pentene			0.04	0.02	0.02
c-2-pentene					
2,2-dimethylbutane	0.03		0.05	0.03	0.02
cyclopentene		0.07		0.03	0.03
cyclopentane		0.03		0.01	0.01
2,3-dimethylbutane					
c-4-methyl-2-pentene					
2-methylpentane		0.26		0.10	0.11
3-methylpentane					
1-hexene			0.04	0.02	0.02
n-hexane	0.06	0.02	1.04	0.38	0.47
t-2-hexene					
c-2-hexene					
methylcylopentane	0.01	0.03		0.02	0.01
2,4-dimethylpentan		0.02	0.01	0.01	0.01
benzene	0.02	0.04	0.01	0.02	0.01
cyclohexane	0.04			0.02	0.02
2-methylhexane		0.09		0.03	0.04
2,3-dimethylpentan		0.07		0.03	0.03
3-methylhexane		0.15		0.05	0.07
n-heptane		0.03	0.01	0.01	0.01
methylcyclohexane		0.34	0.01	0.12	0.16
2,2,3-trimethylpentan					
2,4-dimethylhexane					
2,3,4-trimethylpen	0.02			0.01	0.01
toluene	0.14	0.37	0.15	0.22	0.11
2,3-dimethylhexane		0.02		0.01	0.01
2-methylheptane	0.01	0.04	0.01	0.02	0.01
3-ethylhexane		0.02		0.01	0.01
n-octane	0.02			0.01	0.01
ethylcyclohexane					
ethylbenzene	0.07		0.02	0.03	0.03
p&m-xylene	0.29	0.22	0.12	0.21	0.07
styrene		0.09		0.03	0.04
o-xylene	0.09	0.15	0.03	0.09	0.05
n-nonane	0.05	0.04		0.03	0.02
i-propylbenzene		0.04		0.02	0.02
n-propylbenzene	0.02			0.01	0.01
p-ethyltoluene		0.08		0.03	0.04
m-ethyltoluene					
1,3,5-timethylbenz	0.04	0.14	0.04	0.07	0.05
o-ethyltoluene	0.05		0.03	0.03	0.02
t-butylbenzene					
1,2,4-trimethylbenzen					
i-butylbenzene					
sec-butylbenzene	0.02		0.01	0.01	0.01
1,2,3-trimethylben	0.05	0.08		0.04	0.03
methylstyrene					
1,3-diethylbenzene					
1,4-diethylbenzene			0.01	0.01	0.00
n-butylbenzene	0.02	0.02		0.02	0.01
1,2-diethylbenzene		0.02		0.01	0.01

Flux calculation from VOC compounds detected by GC-FID ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 2 Episode 1	Site 2 Episode 2	Site 2 Episode 3	Site 2 MEAN	Site 2 STD
t-2-butene					
c-2-butene					
i-pentane					
1-pentene			0.01	0.01	0.00
3-methyl-1-butene					
n-pentane		0.12	9.40	3.17	4.40
isoprene		0.04		0.02	0.02
t-2-pentene			0.10	0.04	0.04
c-2-pentene					
2,2-dimethylbutane					
cyclopentene					
cyclopentane		0.20		0.07	0.09
2,3-dimethylbutane		0.21		0.07	0.10
c-4-methyl-2-pente		0.30		0.10	0.14
2-methylpentane	0.06		0.05	0.04	0.02
3-methylpentane					
1-hexene					
n-hexane	0.13	0.06	0.35	0.18	0.13
t-2-hexene					
c-2-hexene					
methylcylopentane	0.06			0.02	0.03
2,4-dimethylpentan			0.01	0.01	0.00
benzene	0.02	0.41	0.01	0.15	0.18
cyclohexane		0.01		0.01	0.00
2-methylhexane			0.12	0.04	0.05
2,3-dimethylpentan	0.02	0.15		0.06	0.07
3-methylhexane					
n-heptane					
methylcyclohexane		0.07	0.02	0.03	0.03
2,2,3-trimethylpen	0.20			0.07	0.09
2,4-dimethylhexane		0.01		0.01	0.00
2,3,4-trimethylpentan					
toluene	0.38	0.33	5.26	1.99	2.31
2,3-dimethylhexane			0.01	0.01	0.00
2-methylheptane	0.01	0.17		0.06	0.08
3-ethylhexane			0.03	0.01	0.01
n-octane	0.02			0.01	0.01
ethylcyclohexane					
ethylbenzene			0.08	0.03	0.04
p&m-xylene		0.37	0.31	0.23	0.16
styrene		0.34		0.12	0.16
o-xylene	0.04	0.17	0.21	0.14	0.07
n-nonane	0.05			0.02	0.02
i-propylbenzene		0.38	0.06	0.15	0.17
n-propylbenzene	0.02	0.02		0.02	0.01
p-ethyltoluene		0.26	0.03	0.10	0.12
m-ethyltoluene		0.01	0.04	0.02	0.01
1,3,5-timethylbenz	0.03			0.01	0.01
o-ethyltoluene	0.04	0.49		0.18	0.22
t-butylbenzene		0.05		0.02	0.02
1,2,4-trimethylbenzen					
i-butylbenzene			0.03	0.01	0.01
sec-butylbenzene	0.02	0.28	0.03	0.11	0.12
1,2,3-trimethylbenzen					
methylstyrene		0.06		0.02	0.02
1,3-diethylbenzene					
1,4-diethylbenzene					
n-butylbenzene			0.05	0.02	0.02
1,2-diethylbenzene					

Flux calculation from VOC compounds detected by GC-FID ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 3 Episode 1	Site 3 Episode 2	Site 3 Episode 3	Site 3 MEAN	Site 3 STD
t-2-butene					
c-2-butene					
i-pentane					
1-pentene			0.01	0.01	0.00
3-methyl-1-butene					
n-pentane		1.23	0.03	0.42	0.57
isoprene		0.05	0.01	0.02	0.02
t-2-pentene					
c-2-pentene					
2,2-dimethylbutane	0.21	0.06	0.05	0.11	0.07
cyclopentene					
cyclopentane		0.02	0.38	0.14	0.17
2,3-dimethylbutane	0.02	0.02		0.02	0.01
c-4-methyl-2-pentene					
2-methylpentane	0.07	0.12	0.04	0.08	0.04
3-methylpentane					
1-hexene			0.04	0.02	0.02
n-hexane	0.08	0.15	1.12	0.45	0.47
t-2-hexene	0.02			0.01	0.01
c-2-hexene					
methylcylopentane	0.03			0.01	0.01
2,4-dimethylpentan		0.10		0.04	0.05
benzene	0.08	0.33	0.02	0.14	0.14
cyclohexane		0.02		0.01	0.00
2-methylhexane					
2,3-dimethylpentane					
3-methylhexane	0.02		0.08	0.03	0.03
n-heptane	0.02		0.01	0.01	0.01
methylcyclohexane			0.03	0.01	0.01
2,2,3-trimethylpentan					
2,4-dimethylhexane	0.02			0.01	0.01
2,3,4-trimethylpentan					
toluene	0.25	1.41	0.15	0.60	0.57
2,3-dimethylhexane		0.02		0.01	0.00
2-methylheptane			0.01		0.00
3-ethylhexane		0.02		0.01	0.00
n-octane	0.04			0.02	0.02
ethylcyclohexane					
ethylbenzene	0.03		0.03	0.02	0.01
p&m-xylene	0.07	0.33	0.13	0.18	0.11
styrene		0.19		0.07	0.09
o-xylene	0.04	0.13	0.04	0.07	0.04
n-nonane	0.02	0.19		0.07	0.09
i-propylbenzene		0.16	0.04	0.07	0.07
n-propylbenzene	0.03	0.02		0.02	0.01
p-ethyltoluene		0.16		0.06	0.07
m-ethyltoluene					
1,3,5-timethylbenz		0.24	0.04	0.09	0.10
o-ethyltoluene					
t-butylbenzene		0.06		0.02	0.03
1,2,4-trimethylbenzen					
i-butylbenzene					
sec-butylbenzene		0.02		0.01	0.01
1,2,3-trimethylben		0.27		0.09	0.13
methylstyrene					
1,3-diethylbenzene					
1,4-diethylbenzene					
n-butylbenzene		0.04	0.01	0.02	0.01
1,2-diethylbenzene		0.10		0.04	0.05

Flux calculation from VOC compounds detected by GC-FID ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 4 EPISODE 1	Site 4 EPISODE 2	Site 4 EPISODE 3	Site 4 MEAN	Site 4 STD
t-2-butene					
c-2-butene					
i-pentane					
1-pentene					
3-methyl-1-butene					
n-pentane		0.06	0.01	0.03	0.03
isoprene		0.08		0.03	0.04
t-2-pentene			0.05	0.02	0.02
c-2-pentene		0.02		0.01	0.01
2,2-dimethylbutane	0.29		0.05	0.12	0.12
cyclopentene		0.17		0.06	0.08
cyclopentane					
2,3-dimethylbutane					
c-4-methyl-2-pentene					
2-methylpentane	0.02	0.19		0.07	0.09
3-methylpentane					
1-hexene			0.05	0.02	0.02
n-hexane		0.04	0.55	0.20	0.25
t-2-hexene	0.02			0.01	0.01
c-2-hexene					
methylcylopentane					
2,4-dimethylpentan		0.02		0.01	0.01
benzene		0.09	0.02	0.04	0.04
cyclohexane					
2-methylhexane					
2,3-dimethylpentan	0.01	0.11		0.04	0.05
3-methylhexane					
n-heptane					
methylcyclohexane					
2,2,3-trimethylpen		0.01		0.01	0.00
2,4-dimethylhexane					
2,3,4-trimethylpen		0.01		0.01	0.00
toluene	0.03	0.14	0.06	0.08	0.05
2,3-dimethylhexane					
2-methylheptane		0.02		0.01	0.01
3-ethylhexane					
n-octane	0.02			0.01	0.01
ethylcyclohexane					
ethylbenzene	0.02		0.01	0.01	0.01
p&m-xylene	0.09	0.09	0.03	0.07	0.03
styrene		0.10		0.04	0.04
o-xylene	0.03	0.05	0.04	0.04	0.01
n-nonane		0.03		0.01	0.01
i-propylbenzene		0.04		0.02	0.02
n-propylbenzene					
p-ethyltoluene		0.05		0.02	0.02
m-ethyltoluene					
1,3,5-timethylbenzene					
o-ethyltoluene			0.01	0.01	0.00
t-butylbenzene					
1,2,4-trimethylbenzen					
i-butylbenzene					
sec-butylbenzene					
1,2,3-trimethylben		0.07		0.03	0.03
methylstyrene		0.01		0.01	0.00
1,3-diethylbenzene					
1,4-diethylbenzene					
n-butylbenzene					
1,2-diethylbenzene		0.02		0.01	0.01

Flux calculation from VOC compounds detected by GC-FID ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 5 Episode 1	Site 5 Episode 2	Site 5 Episode 3	Site 5 MEAN	Site 5 STD
t-2-butene					
c-2-butene					
i-pentane					
1-pentene					
3-methyl-1-butene					
n-pentane		1.19	0.02	0.41	0.56
isoprene					
t-2-pentene	0.02	0.02		0.02	0.01
c-2-pentene					
2,2-dimethylbutane		0.02		0.01	0.01
cyclopentene					
cyclopentane					
2,3-dimethylbutane					
c-4-methyl-2-pentene					
2-methylpentane		0.11		0.04	0.05
3-methylpentane			0.08	0.03	0.03
1-hexene					
n-hexane	0.05	0.12	1.03	0.40	0.45
t-2-hexene					
c-2-hexene					
methylcylopentane	0.03	0.05		0.03	0.02
2,4-dimethylpentane					
benzene		0.07		0.03	0.03
cyclohexane			0.01	0.01	0.00
2-methylhexane		0.04		0.02	0.02
2,3-dimethylpentane					
3-methylhexane					
n-heptane					
methylcyclohexane					
2,2,3-trimethylpentan					
2,4-dimethylhexane					
2,3,4-trimethylpentan					
toluene	0.15	1.00	0.08	0.41	0.42
2,3-dimethylhexane					
2-methylheptane		0.02		0.01	0.01
3-ethylhexane					
n-octane					
ethylcyclohexane					
ethylbenzene	0.03		0.01	0.01	0.01
p&m-xylene	0.05	0.05	0.03	0.04	0.01
styrene		0.02	0.04	0.02	0.01
o-xylene	0.02	0.02	0.04	0.03	0.01
n-nonane		0.03		0.01	0.01
i-propylbenzene			0.01	0.01	0.00
n-propylbenzene					
p-ethyltoluene			0.02	0.01	0.01
m-ethyltoluene					
1,3,5-timethylbenzene					
o-ethyltoluene	0.03			0.01	0.01
t-butylbenzene					
1,2,4-trimethylbenzen					
i-butylbenzene		0.02		0.01	0.01
sec-butylbenzene					
1,2,3-trimethylben		0.04		0.02	0.02
methylstyrene					
1,3-diethylbenzene		0.13		0.05	0.06
1,4-diethylbenzene					
n-butylbenzene					

Flux calculation from VOC compounds detected by GC-FID ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 6 Episode 1	Site 6 Episode 2	Site 6 Episode 3	Site 6 MEAN	Site 6 STD
t-2-butene					
c-2-butene					
i-pentane					
1-pentene					
3-methyl-1-butene					
n-pentane		2.01	0.02	0.68	0.94
isoprene		0.08		0.03	0.04
t-2-pentene		0.28	0.02	0.10	0.13
c-2-pentene			0.01	0.01	0.00
2,2-dimethylbutane		0.12	0.06	0.06	0.05
cyclopentene					
cyclopentane			0.09	0.03	0.04
2,3-dimethylbutane		0.03		0.01	0.01
c-4-methyl-2-pentene					
2-methylpentane	0.02	0.16	0.01	0.06	0.07
3-methylpentane			0.05	0.02	0.02
1-hexene			0.06	0.02	0.02
n-hexane	0.19	0.28	0.57	0.35	0.16
t-2-hexene					
c-2-hexene					
methylcylopentane	0.11			0.04	0.05
2,4-dimethylpentane					
benzene		0.34		0.12	0.16
cyclohexane		0.02		0.01	0.01
2-methylhexane		0.07		0.03	0.03
2,3-dimethylpentane					
3-methylhexane			0.05	0.02	0.02
n-heptane					
methylcyclohexane					
2,2,3-trimethylpen		0.09		0.03	0.04
2,4-dimethylhexane					
2,3,4-trimethylpentan					
toluene	0.02	2.58	0.06	0.89	1.20
2,3-dimethylhexane		0.02		0.01	0.01
2-methylheptane		0.19		0.07	0.09
3-ethylhexane		0.03		0.01	0.01
n-octane		0.04	0.01	0.02	0.01
ethylcyclohexane					
ethylbenzene			0.02	0.01	0.01
p&m-xylene	0.02	0.49	0.07	0.19	0.21
styrene		0.34		0.12	0.16
o-xylene		0.27	0.04	0.10	0.12
n-nonane		0.44	0.02	0.15	0.20
i-propylbenzene					
n-propylbenzene					
p-ethyltoluene			0.02	0.01	0.01
m-ethyltoluene			0.02	0.01	0.01
1,3,5-timethylbenzene					
o-ethyltoluene					
t-butylbenzene		0.13		0.05	0.06
1,2,4-trimethylbenzen					
i-butylbenzene			0.01	0.01	0.00
sec-butylbenzene		0.04		0.02	0.02
1,2,3-trimethylben	0.02	0.75	0.01	0.26	0.34
methylstyrene					
1,3-diethylbenzene					
1,4-diethylbenzene					
n-butylbenzene		0.08		0.03	0.04
1,2-diethylbenzene		0.20		0.07	0.09

Flux calculations from VOC compounds detected by GC-ECD ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 1 Episode 1	Site 1 Episode 2	Site 1 Episode 3	Site 1 MEAN	Site 1 STD
Methylene Chloride			6.78	2.26	3.19
Chloroform			0.05	0.02	0.02
1,1,1-trichloroeth	0.25		0.55	0.27	0.22
Carbon tetrachloride					
1,2-Dichloroethane					
Trichloroethylene	0.26			0.09	0.12
Tetrachloroethene	0.34		0.01	0.12	0.16

Flux calculations from VOC compounds detected by GC-ECD ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 2 Episode 1	Site 2 Episode 2	Site 2 Episode 3	Site 2 MEAN	Site 2 STD
Methylene Chloride		1.31		0.44	0.62
Chloroform					
1,1,1-trichloroeth	0.39		3.55	1.32	1.59
Carbon tetrachlori	0.11			0.04	0.05
1,2-Dichloroethane					
Trichloroethylene	0.36	0.03	0.19	0.19	0.13
Tetrachloroethene					

Flux calculations from VOC compounds detected by GC-ECD ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 3 Episode 1	Site 3 Episode 2	Site 3 Episode 3	Site 3 MEAN	Site 3 STD
Methylene Chloride			0.33	0.11	0.15
Chloroform			0.01	0.01	0.00
1,1,1-trichloroeth	0.19		0.31	0.17	0.12
Carbon tetrachlori	0.15			0.05	0.07
1,2-Dichloroethane					
Trichloroethylene	0.07	0.03	0.02	0.04	0.02
Tetrachloroethene	0.14		0.02	0.05	0.06

Flux calculations from VOC compounds detected by GC-ECD ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 4 Episode 1	Site 4 Episode 2	Site 4 Episode 3	Site 4 MEAN	Site 4 STD
Methylene Chloride			0.27	0.09	0.13
Chloroform					
1,1,1-trichloroeth	0.12			0.04	0.05
Carbon tetrachloride					
1,2-Dichloroethane					
Trichloroethylene					
Tetrachloroethene	1.06			0.36	0.50

Flux calculations from VOC compounds detected by GC-ECD ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 5 Episode 1	Site 5 Episode 2	Site 5 Episode 3	Site 5 MEAN	Site 5 STD
Methylene Chloride					
Chloroform					
1,1,1-trichloroeth	0.35		0.24	0.20	0.14
Carbon tetrachlori		0.07		0.03	0.03
1,2-Dichloroethane					
Trichloroethylene		0.04	0.01	0.02	0.01
Tetrachloroethene	0.33			0.11	0.15

Flux calculations from VOC compounds detected by GC-ECD ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 6 Episode 1	Site 6 Episode 2	Site 6 Episode 3	Site 6 MEAN	Site 6 STD
Methylene Chloride		0.39		0.13	0.18
Chloroform		0.04	0.04	0.03	0.02
1,1,1-trichloroeth			0.11	0.04	0.05
Carbon tetrachloride					
1,2-Dichloroethane	0.08			0.03	0.04
Trichloroethylene		0.04	0.01	0.02	0.02
Tetrachloroethene			0.01	0.01	0.00

Flux calculations from VOC compounds detected by GC-MS ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 1 Episode 1	Site 1 Episode 2	Site 1 Episode 3	Site 1 MEAN	Site 1 STD
Freon 12					
chloromethane		3.81		1.28	1.79
Freon 114					
vinyl chloride					
bromomethane			0.22	0.08	0.10
chloroethane					
Freon 11					
1,1-dichloroethene					
dichloromethane	0.17		1.01	0.40	0.44
trichlorotriflouroeth					
1,1-dichloroethane					
c-1,2-dichloroethene					
chloroform					
1,1,1-trichloethan	0.58	0.19		0.26	0.24
1,2-dichloroethane					
benzene					
carbon tetrachloride					
trichloroethene					
1,2-dichloropropane					
t-1,3-dichloropropene					
toluene	0.17	0.27	0.19	0.21	0.05
c-1,3-dichloropropene					
1,1,2-trichloroethane					
1,2-dibromoethane					
tetrachloroethene	0.17			0.06	0.08
chlorobenzene	0.13			0.05	0.06
ethylbenzene					
m,p-xylene	0.20		0.09	0.10	0.08
styrene					
1,1,2,2-tetrachloroet					
o-xylene	0.14			0.05	0.06
4-ethyltoluene		0.21		0.08	0.09
1,3,5-trimethylben	0.25			0.09	0.11
1,2,4-trimethylben	0.42	0.16		0.20	0.17
m-dichlorobenzene	0.34			0.12	0.16
benzyl chloride	0.14			0.05	0.06
p-dichlorobenzene	0.14			0.05	0.06
o-dichlorobenzene					
1,2,4-trichlorobenzen					
hexachlorobutadiene					
dibromochloropropane					
acetone					
dimethyl disulfide					
methyl isobutyl ketone					
t-1,2-dichloroethene					
dicyclopentadiene					
bicychloheptadiene					

Flux calculations from VOC compounds detected by GC-MS ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 2 Episode 1	Site 2 Episode 2	Site 2 Episode 3	Site 2 MEAN	Site 2 STD
Freon 12		0.12		0.05	0.05
chloromethane	0.18	0.20		0.13	0.09
Freon 114					
vinyl chloride					
bromomethane					
chloroethane					
Freon 11	1.44		6.19	2.55	2.64
1,1-dichloroethene					
dichloromethane	0.56		0.72	0.43	0.30
trichlorotriflouro			0.53	0.18	0.25
1,1-dichloroethane					
c-1,2-dichloroethene					
chloroform					
1,1,1-trichloethan	0.44		6.00	2.15	2.73
1,2-dichloroethane					
benzene					
carbon tetrachloride					
trichloroethene			0.37	0.13	0.17
1,2-dichloropropane					
t-1,3-dichloropropene					
toluene	0.29	0.46	7.82	2.86	3.51
c-1,3-dichloropropene					
1,1,2-trichloroethane					
1,2-dibromoethane					
tetrachloroethene					
chlorobenzene					
ethylbenzene			0.98	0.33	0.46
m,p-xylene			0.48	0.17	0.22
styrene					
1,1,2,2-tetrachloroet					
o-xylene			0.16	0.06	0.07
4-ethyltoluene	0.28	0.19	0.42	0.30	0.10
1,3,5-trimethylben			0.14	0.05	0.06
1,2,4-trimethylben	0.21	0.17	0.44	0.27	0.12
m-dichlorobenzene	0.23			0.08	0.10
benzyl chloride					
p-dichlorobenzene			0.15	0.06	0.07
o-dichlorobenzene					
1,2,4-trichlorobenzen					
hexachlorobutadiene					
dibromochloropropane					
acetone					
dimethyl disulfide					
methyl isobutyl ketone					
t-1,2-dichloroethene					
dicyclopentadiene					
bicychloheptadiene					

Flux calculations from VOC compounds detected by GC-MS ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 3 Episode 1	Site 3 Episode 2	Site 3 Episode 3	Site 3 MEAN	Site 3 STD
Freon 12	0.19	0.12		0.11	0.07
chloromethane	0.16	2.01		0.73	0.91
Freon 114	0.26			0.09	0.12
vinyl chloride					
bromomethane					
chloroethane					
Freon 11			1.65	0.56	0.77
1,1-dichloroethene	0.25			0.09	0.11
dichloromethane	0.81		1.01	0.61	0.43
trichlorotriflouro			18.39	6.14	8.66
1,1-dichloroethane					
c-1,2-dichloroethene					
chloroform					
1,1,1-trichloethan	0.23	0.26	0.34	0.28	0.05
1,2-dichloroethane					
benzene					
carbon tetrachloride					
trichloroethene					
1,2-dichloropropane					
t-1,3-dichloropropene					
toluene	0.16	2.09	0.15	0.80	0.91
c-1,3-dichloropropene					
1,1,2-trichloroethane					
1,2-dibromoethane					
tetrachloroethene					
chlorobenzene					
ethylbenzene					
m,p-xylene			0.15	0.06	0.06
styrene					
1,1,2,2-tetrachloroet					
o-xylene					
4-ethyltoluene	0.13	0.16		0.10	0.07
1,3,5-trimethylbenzen					
1,2,4-trimethylben	0.19	0.14		0.11	0.08
m-dichlorobenzene	0.26			0.09	0.12
benzyl chloride					
p-dichlorobenzene					
o-dichlorobenzene					
1,2,4-trichlorobenzen					
hexachlorobutadiene					
dibromochloropropane					
acetone					
dimethyl disulfide					
methyl isobutyl ketone					
t-1,2-dichloroethene					
dicyclopentadiene					
bicychloheptadiene					

Flux calculations from VOC compounds detected by GC-MS ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 4 Episode 1	Site 4 Episode 2	Site 4 Episode 3	Site 4 MEAN	Site 4 STD
Freon 12					
chloromethane		0.83		0.28	0.39
Freon 114					
vinyl chloride					
bromomethane					
chloroethane					
Freon 11			0.45	0.16	0.21
1,1-dichloroethene					
dichloromethane	0.54		0.89	0.48	0.36
trichlorotriflouroeth					
1,1-dichloroethane					
c-1,2-dichloroethene					
chloroform					
1,1,1-trichloethane					
1,2-dichloroethane					
benzene					
carbon tetrachloride					
trichloroethene					
1,2-dichloropropane					
t-1,3-dichloropropene					
toluene		0.17		0.06	0.08
c-1,3-dichloropropene					
1,1,2-trichloroethane					
1,2-dibromoethane					
tetrachloroethene					
chlorobenzene					
ethylbenzene					
m,p-xylene					
styrene					
1,1,2,2-tetrachloroet					
o-xylene					
4-ethyltoluene					
1,3,5-trimethylbenzen					
1,2,4-trimethylbenzen					
m-dichlorobenzene					
benzyl chloride					
p-dichlorobenzene					
o-dichlorobenzene					
1,2,4-trichlorobenzen					
hexachlorobutadiene					
dibromochloropropane					
acetone					
dimethyl disulfide					
methyl isobutyl ketone					
t-1,2-dichloroethene					
dicyclopentadiene					
bicychloheptadiene					

Flux calculations from VOC compounds detected by GC-MS ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 5 Episode 1	Site 5 Episode 2	Site 5 Episode 3	Site 5 MEAN	Site 5 STD
Freon 12		0.12		0.05	0.05
chloromethane		0.39		0.14	0.18
Freon 114					
vinyl chloride					
bromomethane					
chloroethane					
Freon 11	0.67		1.23	0.64	0.50
1,1-dichloroethene	0.19			0.07	0.08
dichloromethane	0.77		0.76	0.51	0.36
trichlorotriflouroeth					
1,1-dichloroethane					
c-1,2-dichloroethene					
chloroform					
1,1,1-trichloethan	0.25	0.44		0.23	0.18
1,2-dichloroethane					
benzene					
carbon tetrachloride					
trichloroethene					
1,2-dichloropropane					
t-1,3-dichloropropene					
toluene	0.12	6.42		2.18	3.00
c-1,3-dichloropropene					
1,1,2-trichloroethane					
1,2-dibromoethane					
tetrachloroethene					
chlorobenzene					
ethylbenzene					
m,p-xylene					
styrene					
1,1,2,2-tetrachloroet					
o-xylene					
4-ethyltoluene					
1,3,5-trimethylbenzen					
1,2,4-trimethylben		0.13		0.05	0.06
m-dichlorobenzene					
benzyl chloride					
p-dichlorobenzene					
o-dichlorobenzene					
1,2,4-trichlorobenzen					
hexachlorobutadiene					
dibromochloropropane					
acetone					
dimethyl disulfide					
methyl isobutyl ketone					
t-1,2-dichloroethene					
dicyclopentadiene					
bicychloheptadiene					

Flux calculations from VOC compounds detected by GC-MS ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 6 Episode 1	Site 6 Episode 2	Site 6 Episode 3	Site 6 MEAN	Site 6 STD
Freon 12					
chloromethane		2.14		0.72	1.01
Freon 114					
vinyl chloride					
bromomethane					
chloroethane					
Freon 11			1.13	0.38	0.53
1,1-dichloroethene					
dichloromethane	0.45		0.71	0.39	0.29
trichlorotriflouro			4.61	1.54	2.17
1,1-dichloroethane					
c-1,2-dichloroethene					
chloroform					
1,1,1-trichloethan		0.48		0.17	0.22
1,2-dichloroethane					
benzene					
carbon tetrachloride					
trichloroethene					
1,2-dichloropropane					
t-1,3-dichloropropene					
toluene		3.45		1.16	1.62
c-1,3-dichloropropene					
1,1,2-trichloroethane					
1,2-dibromoethane					
tetrachloroethene					
chlorobenzene					
ethylbenzene					
m,p-xylene					
styrene					
1,1,2,2-tetrachloroet					
o-xylene					
4-ethyltoluene		0.25		0.09	0.11
1,3,5-trimethylbenzen					
1,2,4-trimethylben		0.21		0.08	0.10
m-dichlorobenzene					
benzyl chloride					
p-dichlorobenzene					
o-dichlorobenzene					
1,2,4-trichlorobenzen					
hexachlorobutadiene					
dibromochloropropane					
acetone					
dimethyl disulfide					
methyl isobutyl ketone					
t-1,2-dichloroethene					
dicyclopentadiene					
bicychloheptadiene					

Flux calculations from SVOC compounds detected by GC ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 1 Episode 1	Site 1 Episode 2	Site 1 Episode 3	Site 1 MEAN	Site 1 STD
a-BHC		0.002	0.002	0.001	0.001
b-BHC		0.001		0.001	0.001
Lindane (g-BHC)					
d-BHC					
Heptachlor		0.004	0.004	0.003	0.002
Aldrin			0.002	0.001	0.001
Heptachlor Epoxide					
Endosulfan I			0.003	0.001	0.001
Dieldrin					
p,p' DDE					
Endrin					
Endosulfan II					
p,p' DDD	0.001			0.001	0.000
Endrin Aldehyde					
Endosulfan Sulfate					
p,p' DDT					
Chlordane					
Di-(2-ethylhexyl)-pht					
Hexachloroethane					

Flux calculations from SVOC compounds detected by GC (μg m^{-2} min^{-1}).

Compound	Site 2 Episode 1	Site 2 Episode 2	Site 2 Episode 3	Site 2 MEAN	Site 1 STD
a-BHC	0.009			0.003	0.004
b-BHC			0.001	0.001	0.000
Lindane (g-BHC)					
d-BHC					
Heptachlor		0.005		0.002	0.002
Aldrin					
Heptachlor Epoxide	0.001			0.001	0.000
Endosulfan I					
Dieldrin					
p,p' DDE					
Endrin					
Endosulfan II					
p,p' DDD					
Endrin Aldehyde	0.006			0.002	0.003
Endosulfan Sulfate	0.006			0.002	0.003
p,p' DDT					
Chlordane					
Di-(2-ethylhexyl)-pht					
Hexachloroethane					

Flux calculations from SVOC compounds detected by GC ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 3 Episode 1	Site 3 Episode 2	Site 3 Episode 3	Site 3 MEAN	Site 3 STD
a-BHC	0.036			0.012	0.017
b-BHC			0.027	0.009	0.013
Lindane (g-BHC)					
d-BHC					
Heptachlor		0.011	0.020	0.010	0.008
Aldrin			0.004	0.001	0.002
Heptachlor Epoxide	0.003			0.001	0.001
Endosulfan I	0.004		0.005	0.003	0.002
Dieldrin	0.002			0.001	0.001
p,p′ DDE	0.002	0.003		0.002	0.001
Endrin		0.008		0.003	0.004
Endosulfan II	0.050			0.017	0.023
p,p′ DDD	0.013			0.005	0.006
Endrin Aldehyde					
Endosulfan Sulfate					
p,p′ DDT					
Chlordane					
Di-(2-ethylhexyl)-pht					
Hexachloroethane					

Flux calculations from SVOC compounds detected by GC ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 4 Episode 1	Site 4 Episode 2	Site 4 Episode 3	Site 4 MEAN	Site 4 STD
a-BHC		0.005	0.003	0.003	0.002
b-BHC		0.002		0.001	0.001
Lindane (g-BHC)					
d-BHC					
Heptachlor		0.036	0.006	0.014	0.016
Aldrin		0.005		0.002	0.002
Heptachlor Epoxide					
Endosulfan I			0.002	0.001	0.001
Dieldrin					
p,p' DDE					
Endrin	0.003	0.023		0.009	0.010
Endosulfan II					
p,p' DDD	0.004			0.002	0.002
Endrin Aldehyde					
Endosulfan Sulfate		0.002		0.001	0.001
p,p' DDT					
Chlordane					
Di-(2-ethylhexyl)-pht					
Hexachloroethane					

Flux calculations from SVOC compounds detected by GC ($\mu g\ m^{-2}\ min^{-1}$).

Compound	Site 5 Episode 1	Site 5 Episode 2	Site 5 Episode 3	Site 5 MEAN	Site 5 STD
a-BHC					
b-BHC					
Lindane (g-BHC)					
d-BHC					
Heptachlor		0.005		0.002	0.002
Aldrin					
Heptachlor Epoxide					
Endosulfan I			0.008	0.003	0.004
Dieldrin					
p,p' DDE		0.002		0.001	0.001
Endrin	0.005	0.013		0.006	0.005
Endosulfan II					
p,p' DDD					
Endrin Aldehyde					
Endosulfan Sulfate		0.002		0.001	0.001
p,p' DDT					
Chlordane					
Di-(2-ethylhexyl)-pht					
Hexachloroethane					

Flux calculations from SVOC compounds detected by GC (µg m^{-2} min^{-1}).

Compound	Site 6 Episode 1	Site 6 Episode 2	Site 6 Episode 3	Site 6 MEAN	Site 6 STD
a-BHC		0.002		0.001	0.001
b-BHC					
Lindane (g-BHC)					
d-BHC					
Heptachlor		0.018	0.002	0.007	0.008
Aldrin			0.005	0.002	0.002
Heptachlor Epoxide					
Endosulfan I			0.038	0.013	0.018
Dieldrin					
p,p' DDE		0.004		0.002	0.002
Endrin	0.004			0.002	0.002
Endosulfan II		0.002		0.001	0.001
p,p' DDD					
Endrin Aldehyde		0.008		0.003	0.004
Endosulfan Sulfate					
p,p' DDT					
Chlordane					
Di-(2-ethylhexyl)-pht					
Hexachloroethane					

Appendix E

IRA-F Vent Sampling

Canister Analytical Results

Enseco

Enseco - Air Toxics Laboratory
9537 Telstar Avenue, Suite 118 • El Monte, CA 91731
(818) 442-8400 • FAX: (818) 442-3758

February 26, 1990

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 118
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9004301-001/004
ANALYSES: Volatile Organics by GCMS (EPA TO-14), Tentatively Identified Compounds
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90

PROJECT: IRA - F

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: A9004301-001/004 shown above.

The samples were received by ENSECO Air Toxics Laboratory, intact and with the chain-of-custody record attached.

Please note that ND ( ) means not detected at the detection limit expressed.

Preliminary results were faxed to Mr. Bruce Macdonald at 9:52 A.M. on February 23, 1990.

Marita M. Lorenzo
REVIEWED

APPROVED

Enseco

Enseco - Air Toxics Laboratory
9537 Telstar Avenue, Suite 118 • El Monte, CA 91731
(818) 442-8400 • FAX: (818) 442-3758

LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-001/20/90039

ANALYSIS NO.: A9004301-001
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

Volatile Organics by GCMS (EPA TO-14)

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	45	2
Chloromethane	ND	2.5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	2
Vinyl Chloride	ND	2.5
Bromomethane--	ND	3
Chloroethane	ND	5
Trichlorofluormethane--------------------Freon 11----	2.4	1
cis-1,2-Dichloroethene	ND	2
Carbon Disulfide--------------------------------------	ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	7.9	2
Acetone---	ND	10
Methylene Chloride	ND	4
trans-1,2-Dichloroethene------------------------------	ND	4
1,1-Dichloroethane	ND	2.5
Vinyl Acetate---	ND	2.5
1,1-Dichloroethene	ND	2
2-Butanone--	ND	3
Chloroform	70	2
1,1,1,-Trichloroethane--------------------------------	ND	2
Carbon Tetrachloride	ND	2
Benzene---	ND	3
1,2-Dichloroethane	ND	2
Trichloroethene---------------------------------------	ND	2.5
1,2-Dichloropropane	ND	8
1,4-Dioxane---	ND	7
Bromodichloromethane	ND	2
cis-1,3-Dichloropropene-------------------------------	ND	3
4-Methyl-2-Pentanone	ND	3

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-001/20/90039

ANALYSIS NO.: A9004301-001
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

Volatile Organics by GCMS (EPA TO-14)

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	ND	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	ND	2.5
Ethylbenzene	ND	2.5
Total Xylenes	ND	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	ND	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	ND	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	ND	5
N-Nitrosodimethylamine	ND	10
Bicycloheptadiene	ND	10
Dicyclopentadiene	ND	10
Dimethyl Disulfide	ND	10

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-010/5/90039

ANALYSIS NO.: A9004301-002
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

Volatile Organics by GCMS (EPA TO-14)

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	2
Chloromethane		ND	2.5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	2
Vinyl Chloride		ND	2.5
Bromomethane		ND	3
Chloroethane		ND	5
Trichlorofluormethane	Freon 11	7.7	1
cis-1,2-Dichloroethene		ND	2
Carbon Disulfide		ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	10	2
Acetone		ND	10
Methylene Chloride		ND	4
trans-1,2-Dichloroethene		ND	4
1,1-Dichloroethane		ND	2.5
Vinyl Acetate		ND	2.5
1,1-Dichloroethene		ND	2
2-Butanone		ND	3
Chloroform		240	2
1,1,1,-Trichloroethane		ND	2
Carbon Tetrachloride		ND	2
Benzene		ND	3
1,2-Dichloroethane		ND	2
Trichloroethene		ND	2.5
1,2-Dichloropropane		ND	8
1,4-Dioxane		ND	7
Bromodichloromethane		ND	2
cis-1,3-Dichloropropene		ND	3
4-Methyl-2-Pentanone		ND	3

(cont...)

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-010/5/90039

ANALYSIS NO.: A9004301-002
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

Volatile Organics by GCMS (EPA TO-14)

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	17	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	ND	2.5
Ethylbenzene	ND	2.5
Total Xylenes	ND	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	ND	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	ND	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	ND	5
N-Nitrosodimethylamine	ND	10
Bicycloheptadiene	14	10
Dicyclopentadiene	43	10
Dimethyl Disulfide	ND	10

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-035/20/90039

ANALYSIS NO.: A9004301-003
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

Volatile Organics by GCMS (EPA TO-14)

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	13	2
Chloromethane		ND	2.5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	2
Vinyl Chloride		ND	2.5
Bromomethane		ND	3
Chloroethane		ND	5
Trichlorofluormethane	Freon 11	ND	1
cis-1,2-Dichloroethene		ND	2
Carbon Disulfide		ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	2.3	2
Acetone		ND	10
Methylene Chloride		ND	4
trans-1,2-Dichloroethene		ND	4
1,1-Dichloroethane		ND	2.5
Vinyl Acetate		ND	2.5
1,1-Dichloroethene		ND	2
2-Butanone		ND	3
Chloroform		21	2
1,1,1,-Trichloroethane		ND	2
Carbon Tetrachloride		ND	2
Benzene		ND	3
1,2-Dichloroethane		ND	2
Trichloroethene		ND	2.5
1,2-Dichloropropane		ND	8
1,4-Dioxane		ND	7
Bromodichloromethane		ND	2
cis-1,3-Dichloropropene		ND	3
4-Methyl-2-Pentanone		ND	3

(cont...)

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-035/20/90039

ANALYSIS NO.: A9004301-003
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

Volatile Organics by GCMS (EPA TO-14)

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	ND	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	ND	2.5
Ethylbenzene	ND	2.5
Total Xylenes	ND	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	ND	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	ND	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	ND	5
N-Nitrosodimethylamine	ND	10
Bicycloheptadiene	ND	10
Dicyclopentadiene	ND	10
Dimethyl Disulfide	ND	10

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-061/23/90039

ANALYSIS NO.: A9004301-004
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

Volatile Organics by GCMS (EPA TO-14)

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	200
Chloromethane		ND	250
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	200
Vinyl Chloride		ND	250
Bromomethane		ND	300
Chloroethane		ND	500
Trichlorofluormethane	Freon 11	ND	100
cis-1,2-Dichloroethene		ND	200
Carbon Disulfide		ND	1000
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	ND	200
Acetone		ND	1000
Methylene Chloride		ND	400
trans-1,2-Dichloroethene		ND	400
1,1-Dichloroethane		ND	250
Vinyl Acetate		ND	250
1,1-Dichloroethene		ND	200
2-Butanone		ND	300
Chloroform		18,000	200
1,1,1,-Trichloroethane		ND	200
Carbon Tetrachloride		ND	200
Benzene		ND	300
1,2-Dichloroethane		ND	200
Trichloroethene		ND	250
1,2-Dichloropropane		ND	800
1,4-Dioxane		ND	700
Bromodichloromethane		ND	200
cis-1,3-Dichloropropene		ND	300
4-Methyl-2-Pentanone		ND	300

(cont...)

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-061/23/90039

ANALYSIS NO.: A9004301-004
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

Volatile Organics by GCMS (EPA TO-14)

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	300
trans-1,3-Dichloropropene	ND	300
1,1,2-Trichloroethane	ND	300
Tetrachloroethene	ND	300
2-Hexanone	ND	500
Dibromochloromethane	ND	300
1,2-Dibromoethane	ND	200
Chlorobenzene	ND	250
Ethylbenzene	ND	250
Total Xylenes	ND	500
Styrene	ND	700
Bromoform	ND	200
1,1,2,2-Tetrachloroethane	ND	400
Benzyl Chloride	ND	200
4-Ethyl Toluene	ND	400
1,3,5-Trimethylbenzene	ND	250
1,2,4-Trimethylbenzene	ND	300
1,3-Dichlorobenzene	ND	300
1,4-Dichlorobenzene	ND	400
1,2-Dichlorobenzene	ND	500
1,2,4-Trichlorobenzene	ND	700
Hexachlorobutadiene	ND	500
N-Nitrosodimethylamine	ND	1000
Bicycloheptadiene	ND	1000
Dicyclopentadiene	ND	1000
Dimethyl Disulfide	ND	1000

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9004301
ANALYSES: Volatile Organics by GCMS (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9002141

QC SUMMARY
Volatile Organics by GCMS (EPA TO-14)

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	98	100	1
1,1 Dichloroethene	96	98	3
Trichloroethene	97	102	5
Toluene	95	97	2
1,1,2,2-Tetrachlorethane	97	105	8
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-001/20/90039

ANALYSIS NO.: A9004301-001
ANALYSES: Tentatively Identified Compounds (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound		Results ppb (vol/vol)	Detection Limits
Methyl Cyclopentane	(CAS 96377)	10	5
2,3-dimethyl Pentane	(CAS 565593)	40	5
C-7 substituted cyclic hydrocarbon		40	5
Methyl Cyclohexane	(CAS 108872)	7	5

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-010/5/90039

ANALYSIS NO.: A9004301-002
ANALYSES: Tentatively Identified Compounds (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound		Results ppb (vol/vol)	Detection Limits
3-Methyl Pentane	(CAS 96140)	20	5
2,3-dimethyl Pentane	(CAS 565593)	100	5
C-7 substituted cyclic Hydrocarbon		200	5
Methyl Cyclohexane	(CAS 108872)	60	5

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-035/20/90039

ANALYSIS NO.: A9004301-003
ANALYSES: Tentatively Identified Compounds (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound		Results ppb (vol/vol)	Detection Limits
2,3-dimethyl Pentane	(CAS 565513)	10	5
C-7 substituted cyclic hydrocarbon		10	5

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LABORATORY REPORT

EBASCO SERVICES INCORPORATED
143 Union Blvd., Ste. 1010
Lakewood, CO 80228
ATTN: MR. BRUCE MACDONALD

Sample ID: A-061/23/90039

ANALYSIS NO.: A9004301-004
ANALYSES: Tentatively Identified Compounds (EPA TO-14)
DATE SAMPLED: 2/08/90
DATE SAMPLE REC'D: 2/09/90
DATE ANALYZED: 2/14/90
SAMPLE TYPE: Air

<u>Tentatively Identified Compounds</u>

No compounds above 500 ppb (vol/vol)

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June 5, 1990

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9011401-001/005
ANALYSES: Volatile Organics by GCMS - EPA T014, Tentatively Identified Compounds (TIC's)
DATE SAMPLED: 4/19/90, 4/20/90
DATE SAMPLE REC'D: 4/24/90

PROJECT: IRA - F

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: A9011401-001/005 shown above.

The samples were received by ENSECO Air Toxics Laboratory, intact and with the chain-of-custody record attached.

Please note that ND means not detected at the detection limit expressed.

Laboratory results on the analyses for Volatile Organics by GCMS - EPA T014 were faxed to Mr. Bruce MacDonald at 1:09 P.M. on May 23, 1990.

Marita M. Lonergo
REVIEWED

[signature]
APPROVED

Enseco

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-018/1/90109

ANALYSIS NO.: A9011401-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9005011

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	4
Chloromethane		4000*	50
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	5
Vinyl Chloride		ND	5
Bromomethane		51	6
Chloroethane		23	10
Trichlorofluoromethane	Freon 11	ND	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	ND	4
Acetone		1400*	200
Methylene Chloride		ND	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		69	6
Chloroform		9.1	4
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		ND	4
Benzene		ND	6
1,2-Dichloroethane		ND	4
Trichloroethene		ND	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		10	6

cont.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-018/1/90109

ANALYSIS NO.: A9011401-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9005011

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	32	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	ND	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	12	10
N-Nitrosodimethylamine	23	20
Dimethyl Disulfide	220	20
Bicycloheptadiene	ND	20
Dicyclopentadiene	82	20

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-043/1C/90109

ANALYSIS NO.: A9011401-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90, 5/04/90*
SAMPLE TYPE: Air
QC BATCH NO.:MS101-9005011,MS101-9005041*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	2
Chloromethane	2700*	50
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	2
Vinyl Chloride	ND	2.5
Bromomethane--	42	3
Chloroethane	20	5
Trichlorofluoromethane------------------Freon 11----	ND	1
cis-1,2-Dichloroethene	ND	2
Carbon Disulfide------------------------------------	ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	2
Acetone---	1100*	200
Methylene Chloride	ND	4
trans-1,2-Dichloroethene----------------------------	ND	4
1,1-Dichloroethane	ND	2.5
Vinyl Acetate---------------------------------------	ND	2.5
1,1-Dichloroethene	ND	2
2-Butanone--	63	3
Chloroform	8.2	2
1,1,1,-Trichloroethane------------------------------	ND	2
Carbon Tetrachloride	ND	2
Benzene---	ND	3
1,2-Dichloroethane	ND	2
Trichloroethene-------------------------------------	ND	2.5
1,2-Dichloropropane	ND	8
Bromodichloromethane--------------------------------	ND	2
cis-1,3-Dichloropropene	ND	3
4-Methyl-2-Pentanone--------------------------------	9.7	3

cont.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-043/1C/90109

ANALYSIS NO.: A9011401-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90, 5/04/90*
SAMPLE TYPE: Air
QC BATCH NO.:MS101-9005011,MS101-9005041*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	29	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	ND	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	ND	2.5
Ethylbenzene	ND	2.5
Total Xylenes	ND	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	ND	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	ND	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	6.6	5
N-Nitrosodimethylamine	ND	10
Dimethyl Disulfide	190	10
Bicycloheptadiene	ND	10
Dicyclopentadiene	70	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-017/P-S/90109

ANALYSIS NO.: A9011401-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90, 5/18/90*
SAMPLE TYPE: Air
QC BATCH NO.:MS101-9005011,MS101-9005181*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	390,000*	3000
Chloromethane		390,000*	3750
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	650,000*	3000
Vinyl Chloride		ND	2.5
Bromomethane		ND	3
Chloroethane		ND	5
Trichlorofluoromethane	Freon 11	76	1
cis-1,2-Dichloroethene		ND	2
Carbon Disulfide		ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	7.2	2
Acetone		80	10
Methylene Chloride		110	4
trans-1,2-Dichloroethene		ND	4
1,1-Dichloroethane		ND	2.5
Vinyl Acetate		ND	2.5
1,1-Dichloroethene		ND	2
2-Butanone		280	3
Chloroform		81	2
1,1,1,-Trichloroethane		6500*	3000
Carbon Tetrachloride		230	2
Benzene		18	3
1,2-Dichloroethane		ND	2
Trichloroethene		20,000*	3750
1,2-Dichloropropane		ND	8
Bromodichloromethane		ND	2
cis-1,3-Dichloropropene		ND	3
4-Methyl-2-Pentanone		ND	3

cont.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-017/P-S/90109

ANALYSIS NO.: A9011401-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90, 5/18/90*
SAMPLE TYPE: Air
QC BATCH NO.:MS101-9005011,MS101-9005181*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	360	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	7400*	4500
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	ND	2.5
Ethylbenzene	480	2.5
Total Xylenes	ND	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	8.7	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	9.0	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	ND	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	ND	5
N-Nitrosodimethylamine	ND	10
Dimethyl Disulfide	14	10
Bicycloheptadiene	ND	10
Dicyclopentadiene	ND	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-035/2/90110

ANALYSIS NO.: A9011401-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/20/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90, 5/04/90*
SAMPLE TYPE: Air
QC BATCH NO.:MS101-9005011,MS101-9005041*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	48	2
Chloromethane	6200*	50
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	98	2
Vinyl Chloride	ND	2.5
Bromomethane--	42	3
Chloroethane	20	5
Trichlorofluoromethane------------------Freon 11----	2.3	1
cis-1,2-Dichloroethene	ND	2
Carbon Disulfide--------------------------------------	ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	2
Acetone---	1400*	200
Methylene Chloride	ND	4
trans-1,2-Dichloroethene------------------------------	ND	4
1,1-Dichloroethane	ND	2.5
Vinyl Acetate---	ND	2.5
1,1-Dichloroethene	ND	2
2-Butanone--	61	3
Chloroform	13	2
1,1,1,-Trichloroethane--------------------------------	ND	2
Carbon Tetrachloride	ND	2
Benzene---	ND	3
1,2-Dichloroethane	ND	2
Trichloroethene---------------------------------------	5.6	2.5
1,2-Dichloropropane	ND	8
Bromodichloromethane----------------------------------	ND	2
cis-1,3-Dichloropropene	ND	3
4-Methyl-2-Pentanone----------------------------------	ND	3

cont.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-035/2/90110

ANALYSIS NO.: A9011401-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/20/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90, 5/04/90*
SAMPLE TYPE: Air
QC BATCH NO.:MS101-9005011,MS101-9005041*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	45	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	7.0	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	ND	2.5
Ethylbenzene	ND	2.5
Total Xylenes	9.6	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	ND	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	ND	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	6.8	5
N-Nitrosodimethylamine	ND	10
Dimethyl Disulfide	410	10
Bicycloheptadiene	ND	10
Dicyclopentadiene	110	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-046/3/90110

ANALYSIS NO.: A9011401-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/20/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90, 5/04/90*
SAMPLE TYPE: Air
QC BATCH NO.:MS101-9005011,MS101-9005041*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	2
Chloromethane	2800*	50
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	2
Vinyl Chloride	ND	2.5
Bromomethane--	35	3
Chloroethane	18	5
Trichlorofluoromethane------------------Freon 11----	13	1
cis-1,2-Dichloroethene	ND	2
Carbon Disulfide--------------------------------------	ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	2
Acetone---	1300*	200
Methylene Chloride	ND	4
trans-1,2-Dichloroethene------------------------------	ND	4
1,1-Dichloroethane	ND	2.5
Vinyl Acetate---	ND	2.5
1,1-Dichloroethene	ND	2
2-Butanone--	47	3
Chloroform	10	2
1,1,1,-Trichloroethane--------------------------------	ND	2
Carbon Tetrachloride	ND	2
Benzene---	ND	3
1,2-Dichloroethane	ND	2
Trichloroethene---------------------------------------	ND	2.5
1,2-Dichloropropane	ND	8
Bromodichloromethane----------------------------------	ND	2
cis-1,3-Dichloropropene	ND	3
4-Methyl-2-Pentanone----------------------------------	9.3	3

cont.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-046/3/90110

ANALYSIS NO.: A9011401-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/20/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90, 5/04/90*
SAMPLE TYPE: Air
QC BATCH NO.:MS101-9005011,MS101-9005041*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	41	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	3.4	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	ND	2.5
Ethylbenzene	ND	2.5
Total Xylenes	6.1	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	ND	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	ND	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	6.2	5
N-Nitrosodimethylamine	ND	10
Dimethyl Disulfide	170	10
Bicycloheptadiene	ND	10
Dicyclopentadiene	95	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9011401
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90, 4/20/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9005011

QC SUMMARY
Volatile Organics by GCMS
EPA T014

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	100	100	1
1,1 Dichloroethene	96	97	0
Trichloroethene	99	101	1
Toluene	101	99	2
1,1,2,2-Tetrachlorethane	107	99	8
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9011401
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90, 4/20/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/04/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9005041

QC SUMMARY
Volatile Organics by GCMS
EPA T014

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	100	99	1
1,1 Dichloroethene	94	95	2
Trichloroethene	101	99	2
Toluene	97	96	1
1,1,2,2-Tetrachlorethane	102	106	5
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9011401
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/18/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9005181

QC SUMMARY
Volatile Organics by GCMS
EPA T014

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	98	102	4
1,1 Dichloroethene	93	96	3
Trichloroethene	96	96	0
Toluene	92	96	4
1,1,2,2-Tetrachlorethane	103	115	12
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-018/1/90109

ANALYSIS NO.: A9011401-001
ANALYSES: Tentatively Identified Compounds (EPA T014)
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound		Results ppb (vol/vol)
Iodomethane	CAS# 74884	50
Dimethyl Disulfide	CAS# 624920	70

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-043/1C/90109

ANALYSIS NO.: A9011401-002
ANALYSES: Tentatively Identified Compounds (EPA T014)
DATE SAMPLED: 4/19/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90 & 5/04/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound		Results ppb (vol/vol)
Iodomethane	CAS# 74884	40
Acetic Acid Methyl Ester	CAS# 79209	500
Dimethyl Disulfide	CAS# 624920	2000

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LABORATORY REPORT

EBASCO Rocky Mountain Arsenal South Plants Trailer 72nd & Quebec Streets Commerce City, CO 80022 ATTN: MR. BRUCE MACDONALD Sample ID: A-017/P-S/90109	ANALYSIS NO.: A9011401-003 ANALYSES: Tentatively Identified Compounds (EPA T014) DATE SAMPLED: 4/19/90 DATE SAMPLE REC'D: 4/24/90 DATE ANALYZED: 5/01/90 & 5/18/90 SAMPLE TYPE: Air

Tentatively Identified Compounds

ND (20) ppb (vol/vol)

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-035/2/90110

ANALYSIS NO.: A9011401-004
ANALYSES: Tentatively Identified Compounds (EPA T014)
DATE SAMPLED: 4/20/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90 & 5/04/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound		Results ppb (vol/vol)
Acetic Acid Methyl Ester	CAS# 79209	90
Dimethyl Disulfide	CAS# 624920	90
Branched C11 Indene		90

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LABORATORY REPORT

EBASCO
Rocky Mountain Arsenal
South Plants Trailer
72nd & Quebec Streets
Commerce City, CO 80022
ATTN: MR. BRUCE MACDONALD

Sample ID: A-046/3/90110

ANALYSIS NO.: A9011401-005
ANALYSES: Tentatively Identified Compounds (EPA T014)
DATE SAMPLED: 4/20/90
DATE SAMPLE REC'D: 4/24/90
DATE ANALYZED: 5/01/90 & 5/04/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound		Results ppb (vol/vol)
Iodomethane	CAS# 74884	40
Thiobismethane	CAS# 75183	20
Acetic Acid Methyl Ester	CAS# 79209	600
Dimethyl Disulfide	CAS# 624920	60

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July 30, 1990

EBASCO ENVIRONMENTAL
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9017101-001/005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90

PROJECT: IRA-F

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: A9017101-001/005 shown above.

The samples were received by ENSECO Air Toxics Laboratory, intact and with the chain-of-custody record attached.

Please note that ND means not detected at the detection limit expressed.

Marita M. Lauzon
REVIEWED

[signature]
APPROVED

The Report Cover Letter is an integral part of this report.

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-010/5/90169

ANALYSIS NO.: A9017101-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/28/90, 7/20/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006281, MS101-9007201*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	4
Chloromethane	ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	5
Vinyl Chloride	ND	5
Bromomethane--------------------------------------	ND	6
Chloroethane	33	10
Trichlorofluoromethane------------------Freon 11----	ND	2
cis-1,2-Dichloroethene	ND	4
Carbon Disulfide----------------------------------	ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	110	4
Acetone---	ND	20
Methylene Chloride	13	8
trans-1,2-Dichloroethene--------------------------	ND	8
1,1-Dichloroethane	ND	5
Vinyl Acetate-------------------------------------	ND	5
1,1-Dichloroethene	ND	4
2-Butanone--	ND	6
Chloroform	6100*	40
1,1,1,-Trichloroethane----------------------------	ND	4
Carbon Tetrachloride	ND	4
Benzene---	ND	6
1,2-Dichloroethane	ND	4
Trichloroethene-----------------------------------	5.5	5
1,2-Dichloropropane	ND	16
Bromodichloromethane------------------------------	ND	4
cis-1,3-Dichloropropene	ND	6
4-Methyl-2-Pentanone------------------------------	ND	6

cont.....

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRAUCE MACDONALD

Sample ID: A-010/5/90169

ANALYSIS NO.: A9017101-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/28/90, 7/20/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006281, MS101-9007201*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	340	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	7.1	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nirosodimethylamine	ND	20
Dimethyl Disulfide	ND	20
Bicycloheptadiene	300	20
Dicyclopentadiene	1800*	200

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-039/5C/90169

ANALYSIS NO.: A9017101-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/28/90, 7/20/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006281,
MS101-9007201*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	4
Chloromethane	ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	5
Vinyl Chloride	ND	5
Bromomethane--	ND	6
Chloroethane	31	10
Trichlorofluoromethane------------------Freon 11----	ND	2
cis-1,2-Dichloroethene	ND	4
Carbon Disulfide--	ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	12	4
Acetone---	ND	20
Methylene Chloride	16	8
trans-1,2-Dichloroethene--------------------------------	ND	8
1,1-Dichloroethane	ND	5
Vinyl Acetate---	ND	5
1,1-Dichloroethene	ND	4
2-Butanone--	ND	6
Chloroform	6600*	40
1,1,1,-Trichloroethane----------------------------------	ND	4
Carbon Tetrachloride	ND	4
Benzene---	ND	6
1,2-Dichloroethane	6.8	4
Trichloroethene---	6.1	5
1,2-Dichloropropane	ND	16
Bromodichloromethane------------------------------------	ND	4
cis-1,3-Dichloropropene	ND	6
4-Methyl-2-Pentanone------------------------------------	ND	6

cont...

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LABORATORY REPORT

EBASCO SERVICES INC
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-039/5C/90169

ANALYSIS NO.: A9017101-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/28/90, 7/20/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006281, MS101-9007201*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	360	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nirosodimethylamine	ND	20
Dimethyl Disulfide	ND	20
Bicycloheptadiene	320	20
Dicyclopentadiene	2200*	200

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-043/9/90169

ANALYSIS NO.: A9017101-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90, 7/02/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006291, MS101-9007021*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	4
Chloromethane		ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	5
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		ND	10
Trichlorofluoromethane	Freon 11	ND	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	130	4
Acetone		ND	20
Methylene Chloride		ND	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		ND	6
Chloroform		3900*	4
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		ND	4
Benzene		ND	6
1,2-Dichloroethane		ND	4
Trichloroethene		ND	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

cont...

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-043/9/90169

ANALYSIS NO.: A9017101-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90, 7/02/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006291, MS101-9007021*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	500	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nirosodimethylamine	ND	20
Dimethyl Disulfide	ND	20
Bicycloheptadiene	300	20
Dicyclopentadiene	1100*	200

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Se. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-064/23/90169

ANALYSIS NO.: A9017101-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90, 7/02/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006291, MS101-9007021*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	4
Chloromethane		ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	5
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		140	10
Trichlorofluoromethane	Freon 11	ND	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	24	4
Acetone		ND	20
Methylene Chloride		150	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		35	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		ND	6
Chloroform		100,000*	2000
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		86	4
Benzene		ND	6
1,2-Dichloroethane		25	4
Trichloroethene		28	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

cont....

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-064/23/90169

ANALYSIS NO.: A9017101-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90, 7/02/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006291, MS101-9007021*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	14	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	640	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nirosodimethylamine	ND	20
Dimethyl Disulfide	ND	20
Bicycloheptadiene	1000*	200
Dicyclopentadiene	1100*	200

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-017/20/90169

ANALYSIS NO.: A9017101-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90, 7/02/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006291,
MS101-9007021*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	64	4
Chloromethane		ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	5
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		ND	10
Trichlorofluoromethane	Freon 11	24	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	64	4
Acetone		ND	20
Methylene Chloride		ND	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		ND	6
Chloroform		1400*	4
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		ND	4
Benzene		ND	6
1,2-Dichloroethane		ND	4
Trichloroethene		ND	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

cont...

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-017/20/90169

ANALYSIS NO.: A9017101-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90, 7/02/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006291, MS101-9007021*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	40	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nirosodimethylamine	ND	20
Dimethyl Disulfide	ND	20
Bicycloheptadiene	ND	20
Dicyclopentadiene	29	20

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9017101
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/28/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006281

QC SUMMARY
Volatile Organics by GCMS
EPA T014

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	99	91	8
1,1 Dichloroethene	108	96	12
Trichloroethene	96	94	3
Toluene	100	96	4
1,1,2,2-Tetrachlorethane	100	95	5
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9017101
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9006291

QC SUMMARY
Volatile Organics by GCMS
EPA T014

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	99	107	7
1,1 Dichloroethene	101	110	9
Trichloroethene	98	100	3
Toluene	94	104	10
1,1,2,2-Tetrachlorethane	98	112	13
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9017101
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 7/02/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9007021

QC SUMMARY
Volatile Organics by GCMS
EPA T014

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	100	103	2
1,1 Dichloroethene	102	104	2
Trichloroethene	99	96	3
Toluene	98	97	1
1,1,2,2-Tetrachlorethane	93	99	7
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9017101
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 7/20/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9007201

QC SUMMARY
Volatile Organics by GCMS
EPA T014

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	101	101	0
1,1 Dichloroethene	101	107	6
Trichloroethene	98	99	1
Toluene	96	97	1
1,1,2,2-Tetrachlorethane	104	104	0
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-010/5/90169

ANALYSIS NO.: A9017101-001
ANALYSES: Tentively Identified Compounds
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/28/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compounds		Results ppb (vol/vol)
2-Chloropropane	CAS 75296	20
3-Methyl Pentane	CAS 96140	50
Methyl Cyclopentane	CAS 96377	90
C7 Branched Hydrocarbon		300
Isopropylcyclobutane		500
C7 Unsaturated Alcohol		20
C8 Branched Hydrocarbon		20

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-039/5C/90169

ANALYSIS NO.: A9017101-002
ANALYSES: Tentively Identified Compounds
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/28/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compounds		Results ppb (vol/vol)
Ethanol	CAS 64175	90
3-Methyl Pentane	CAS 96140	70
Methyl Cyclopentane	CAS 96377	90
1-Methylethylcyclopropane	CAS 3638355	300
Isopropylcyclobutane		400
C7 Unsaturated Alcohol		20
C8 Branched Hydrocarbon		20

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-043/9/90169

ANALYSIS NO.: A9017101-003
ANALYSES: Tentively Identified Compounds
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compounds		Results ppb (vol/vol)
3-Methyl Pentane	CAS 96140	70
Methyl Cylcopentane	CAS 96377	100
2,3 Dimethyl Pentane	CAS 565593	100
C-6 Unsaturated Branched Alcohol		60
Dimethyl Cylcopentane		400

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LABORATORY REPORT

EBASCO SERVICES INC.
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-064/23/90169

ANALYSIS NO.: A9017101-004
ANALYSES: Tentively Identified Compounds
DATE SAMPLED: 6/18/90
DATE SAMPLE REC'D: 6/20/90
DATE ANALYZED: 6/29/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compounds		Results ppb (vol/vol)
Ethanol	CAS 64175	300
Trichlorofluoroethane		300
3-Methyl Pentane	CAS 96140	500
Methylcyclopentane	CAS 96377	700

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LABORATORY REPORT

EBASCO SERVICES INC.	ANALYSIS NO.: A9017101-005
143 Union Blvd., Ste. 1010	ANALYSES: Tentively Identified Compounds
Lakewood, CO 80228-1824	DATE SAMPLED: 6/18/90
ATTN: MR. BRUCE MACDONALD	DATE SAMPLE REC'D: 6/20/90
	DATE ANALYZED: 6/29/90
Sample ID: A-017/20/90169	SAMPLE TYPE: Air

Tentatively Identified Compounds

Compounds	Results ppb (vol/vol)
No unknown peaks found	< 20

The Report Cover Letter is an integral part of this report.

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August 25, 1990

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9020008-001/005
ANALYSES: Volatile Organics by GCMS - EPA T014, Tentatively Identified Compounds (TIC's)
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90

PROJECT: IRA-F

PROJECT NO.: VSAA 8864.229

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: A9020008-001/005 shown above.

The samples were received by ENSECO Air Toxics Laboratory, intact and with the chain-of-custody record attached.

Please note that ND means not detected at the detection limit expressed.

Marita M Lavenza
REVIEWED

[signature]
APPROVED

The Report Cover Letter is an integral part of this report.

Enseco A CORNING Company

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-029/1/90199

ANALYSIS NO.: A9020008-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	2
Chloromethane	2800*	25
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	2
Vinyl Chloride	ND	2.5
Bromomethane---------------------------------------	77	3
Chloroethane	96	5
Trichlorofluoromethane------------------Freon 11----	ND	1
cis-1,2-Dichloroethene	ND	2
Carbon Disulfide------------------------------------	ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	2
Acetone---	2000*	100
Methylene Chloride	ND	4
trans-1,2-Dichloroethene----------------------------	ND	4
1,1-Dichloroethane	ND	2.5
Vinyl Acetate---------------------------------------	ND	2.5
1,1-Dichloroethene	ND	2
2-Butanone--	140	3
Chloroform	16	2
1,1,1,-Trichloroethane------------------------------	ND	2
Carbon Tetrachloride	ND	2
Benzene---	5.5	3
1,2-Dichloroethane	ND	2
Trichloroethene-------------------------------------	ND	2.5
1,2-Dichloropropane	ND	8
Bromodichloromethane--------------------------------	ND	2
cis-1,3-Dichloropropene	ND	3
4-Methyl-2-Pentanone--------------------------------	21	3

(cont...)

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-029/1/90199

ANALYSIS NO.: A9020008-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	50	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	5.0	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	6.1	2.5
Ethylbenzene	4.2	2.5
Total Xylenes	26	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	ND	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	8.6	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	9.5	5
Bicycloheptadiene	30	10
Dimethyldisulfide	1200*	100
Dicyclopentadiene	120	10
N-Nitrosodimethylamine	ND	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-017/1C/90199

ANALYSIS NO.: A9020008-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	2
Chloromethane	4900*	25
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	2
Vinyl Chloride	ND	2.5
Bromomethane---	100	3
Chloroethane	81	5
Trichlorofluoromethane------------------Freon 11----	ND	1
cis-1,2-Dichloroethene	ND	2
Carbon Disulfide-------------------------------------	ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	2
Acetone--	2600*	100
Methylene Chloride	ND	4
trans-1,2-Dichloroethene-----------------------------	ND	4
1,1-Dichloroethane	ND	2.5
Vinyl Acetate--	ND	2.5
1,1-Dichloroethene	ND	2
2-Butanone---	140	3
Chloroform	17	2
1,1,1,-Trichloroethane-------------------------------	ND	2
Carbon Tetrachloride	ND	2
Benzene--	4.9	3
1,2-Dichloroethane	ND	2
Trichloroethene--------------------------------------	ND	2.5
1,2-Dichloropropane	ND	8
Bromodichloromethane---------------------------------	ND	2
cis-1,3-Dichloropropene	ND	3
4-Methyl-2-Pentanone---------------------------------	24	3

(cont...)

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-017/1C/90199

ANALYSIS NO.: A9020008-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	48	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	4.5	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	7.3	2.5
Ethylbenzene	34	2.5
Total Xylenes	25	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	5.2	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	8.6	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	9.2	5
Bicycloheptadiene	28	10
Dimethyldisulfide	1200*	100
Dicyclopentadiene	120	10
N-Nitrosodimethylamine	ND	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-016/2/90199

ANALYSIS NO.: A9020008-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	2
Chloromethane	5300*	50
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	2
Vinyl Chloride	ND	2.5
Bromomethane--------------------------------------	52	3
Chloroethane	77	5
Trichlorofluoromethane------------------Freon 11----	ND	1
cis-1,2-Dichloroethene	ND	2
Carbon Disulfide----------------------------------	ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	2
Acetone---	2700*	200
Methylene Chloride	ND	4
trans-1,2-Dichloroethene--------------------------	ND	4
1,1-Dichloroethane	ND	2.5
Vinyl Acetate-------------------------------------	ND	2.5
1,1-Dichloroethene	ND	2
2-Butanone--	140	3
Chloroform	22	2
1,1,1,-Trichloroethane----------------------------	ND	2
Carbon Tetrachloride	ND	2
Benzene---	6.9	3
1,2-Dichloroethane	ND	2
Trichloroethene-----------------------------------	ND	2.5
1,2-Dichloropropane	ND	8
Bromodichloromethane------------------------------	ND	2
cis-1,3-Dichloropropene	ND	3
4-Methyl-2-Pentanone------------------------------	19	3

(cont...)

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-016/2/90199

ANALYSIS NO.: A9020008-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	74	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	7.3	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	5.6	2.5
Ethylbenzene	4.0	2.5
Total Xylenes	25	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	ND	2.5
1,2,4-Trimethylbenzene	7.9	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	7.4	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	11	5
Bicycloheptadiene	33	10
Dimethyldisulfide	1700*	200
Dicyclopentadiene	170	10
N-Nitrosodimethylamine	ND	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-006/3/90199

ANALYSIS NO.: A9020008-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	2
Chloromethane		5200*	50
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	2
Vinyl Chloride		ND	2.5
Bromomethane		88	3
Chloroethane		94	5
Trichlorofluoromethane	Freon 11	ND	1
cis-1,2-Dichloroethene		ND	2
Carbon Disulfide		ND	10
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	ND	2
Acetone		2900*	200
Methylene Chloride		ND	4
trans-1,2-Dichloroethene		ND	4
1,1-Dichloroethane		ND	2.5
Vinyl Acetate		ND	2.5
1,1-Dichloroethene		ND	2
2-Butanone		130	3
Chloroform		29	2
1,1,1,-Trichloroethane		ND	2
Carbon Tetrachloride		ND	2
Benzene		6.3	3
1,2-Dichloroethane		ND	2
Trichloroethene		ND	2.5
1,2-Dichloropropane		ND	8
Bromodichloromethane		ND	2
cis-1,3-Dichloropropene		ND	3
4-Methyl-2-Pentanone		23	3

(cont...)

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LABORATORY REPORT

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Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-006/3/90199

ANALYSIS NO.: A9020008-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	96	3
trans-1,3-Dichloropropene	ND	3
1,1,2-Trichloroethane	ND	3
Tetrachloroethene	10	3
2-Hexanone	ND	5
Dibromochloromethane	ND	3
1,2-Dibromoethane	ND	2
Chlorobenzene	7.1	2.5
Ethylbenzene	4.6	2.5
Total Xylenes	31	5
Styrene	ND	7
Bromoform	ND	2
1,1,2,2-Tetrachloroethane	ND	4
Benzyl Chloride	ND	2
4-Ethyl Toluene	ND	4
1,3,5-Trimethylbenzene	4.0	2.5
1,2,4-Trimethylbenzene	8.6	3
1,3-Dichlorobenzene	ND	3
1,4-Dichlorobenzene	8.5	4
1,2-Dichlorobenzene	ND	5
1,2,4-Trichlorobenzene	ND	7
Hexachlorobutadiene	14	5
Bicycloheptadiene	49	10
Dimethyldisulfide	910*	100
Dicyclopentadiene	220	10
N-Nitrosodimethylamine	ND	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-064/P-E/90199

ANALYSIS NO.: A9020008-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90, 7/30/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007301

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	370,000*	20,000
Chloromethane	590,000*	25,000
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	1,000,000*	20,000
Vinyl Chloride	ND	500
Bromomethane--	ND	600
Chloroethane	ND	1,000
Trichlorofluoromethane------------------Freon 11----	ND	200
cis-1,2-Dichloroethene	ND	400
Carbon Disulfide------------------------------------	ND	2,000
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	400
Acetone---	ND	2,000
Methylene Chloride	ND	800
trans-1,2-Dichloroethene----------------------------	ND	800
1,1-Dichloroethane	ND	500
Vinyl Acetate---------------------------------------	ND	500
1,1-Dichloroethene	ND	400
2-Butanone--	ND	600
Chloroform	ND	400
1,1,1,-Trichloroethane------------------------------	2,600	400
Carbon Tetrachloride	ND	400
Benzene---	ND	600
1,2-Dichloroethane	ND	400
Trichloroethene-------------------------------------	5,500	500
1,2-Dichloropropane	ND	1,600
Bromodichloromethane--------------------------------	ND	400
cis-1,3-Dichloropropene	ND	600
4-Methyl-2-Pentanone--------------------------------	ND	600

(cont...)

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-064/P-E/90199

ANALYSIS NO.: A9020008-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90, 7/30/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007301

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	600
trans-1,3-Dichloropropene	ND	600
1,1,2-Trichloroethane	ND	600
Tetrachloroethene	4,800	600
2-Hexanone	ND	1,000
Dibromochloromethane	ND	600
1,2-Dibromoethane	ND	400
Chlorobenzene	ND	500
Ethylbenzene	ND	500
Total Xylenes	ND	1,000
Styrene	ND	1,400
Bromoform	ND	400
1,1,2,2-Tetrachloroethane	ND	800
Benzyl Chloride	ND	400
4-Ethyl Toluene	ND	800
1,3,5-Trimethylbenzene	ND	500
1,2,4-Trimethylbenzene	ND	600
1,3-Dichlorobenzene	ND	600
1,4-Dichlorobenzene	ND	800
1,2-Dichlorobenzene	ND	1,000
1,2,4-Trichlorobenzene	ND	1,400
Hexachlorobutadiene	ND	1,000
Bicycloheptadiene	ND	2,000
Dimethyldisulfide	ND	2,000
Dicyclopentadiene	ND	2,000
N-Nitrosodimethylamine	ND	2,000

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9020008
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

QC SUMMARY
Volatile Organics by GCMS

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	104	102	3
1,1 Dichloroethene	104	105	0
Trichloroethene	95	87	9
Toluene	107	101	7
1,1,2,2-Tetrachlorethane	99	97	2
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9020008
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/30/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007301

QC SUMMARY
Volatile Organics by GCMS

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	91	96	5
1,1 Dichloroethene	96	98	1
Trichloroethene	95	94	1
Toluene	98	95	3
1,1,2,2-Tetrachlorethane	99	94	6
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-029/1/90199

ANALYSIS NO.: A9020008-001
ANALYSES: Tentatively Identified Compounds
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Tentatively Identified Compounds

Compounds	Results ppb (vol/vol)
Iodomethane	40
N-Methyl-N-nitroso Methanamine	800
2-methyl-propanenitrile	20
N-N-dimethyl Acetamide	400
1,1-bis(Methylthio)-ethane	200

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-017/1C/90199

ANALYSIS NO.: A9020008-002
ANALYSES: Tentatively Identified Compounds
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Tentatively Identified Compounds

Compounds	Results ppb (vol/vol)
Acetyl Chloride	20
3-Butenenitrile	30
Acetic Acid	20
N,N-dimethyl Acetamide	70
1,1-bis(methylthio)-ethane	200

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-016/2/90199

ANALYSIS NO.: A9020008-003
ANALYSES: Tentatively Identified Compounds
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Tentatively Identified Compounds

Compounds	Results ppb (vol/vol)
Iodomethane	50
N-Methyl-N-nitroso Methanamine	1000
Acetic Acid	30
N-N-dimethyl Acetamide	50
1,1-bis(Methylthio)-ethane	200

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LABORATORY REPORT

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143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-006/3/90199

ANALYSIS NO.: A9020008-004
ANALYSES: Tentatively Identified Compounds
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007241

Tentatively Identified Compounds

Compounds	Results ppb (vol/vol)
Iodomethane	40
Acetic Acid	20
N,N-dimethyl Acetamide	30
1,1-bis(Methylthio)-ethane	200
Endo-bicyclopentadiene	20
2-ethyl-1-hexanol	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-064/P-E/90199

ANALYSIS NO.: A9020008-005
ANALYSES: Tentatively Identified Compounds
DATE SAMPLED: 7/18/90
DATE SAMPLE REC'D: 7/19/90
DATE ANALYZED: 7/30/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9007301

Tentatively Identified Compounds

Results
ppb (vol/vol)

ND < 600 ppb

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September 22, 1990

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9022807-001/005
ANALYSES: Volatile Organics by GCMS - EPA T014, Tentatively Identified Compounds (TICs), Total Hydrocarbons as Methane, Fixed Gas (ASTM-D1946)
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90

PROJECT: IRA - F

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: A9022807-001/005 shown above.

The samples were received by ENSECO Air Toxics Laboratory, intact and with the chain-of-custody record attached.

Marita M. Lorenzo
REVIEWED

APPROVED

The Report Cover Letter is an integral part of this report.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-002/9C/90227

ANALYSIS NO.: A9022807-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241,
MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	4
Chloromethane		ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	4
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		24	10
Trichlorofluoromethane	Freon 11	ND	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	50	4
Acetone		ND	20
Methylene Chloride		ND	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		ND	6
Chloroform		6700*	80
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		ND	4
Benzene		ND	6
1,2-Dichloroethane		ND	4
Trichloroethene		ND	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

cont....

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-002/9C/90227

ANALYSIS NO.: A9022807-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241, MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	740	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nitrosodimethylamine	ND	20
Bicycloheptadiene	790*	400
Dimethyldisulfide	ND	10
Dicyclopentadiene	1200*	400

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-018/9/90227

ANALYSIS NO.: A9022807-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241,
MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	4
Chloromethane		ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	4
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		14	10
Trichlorofluoromethane	Freon 11	ND	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	130	4
Acetone		ND	20
Methylene Chloride		ND	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		ND	6
Chloroform		4100*	80
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		ND	4
Benzene		ND	6
1,2-Dichloroethane		ND	4
Trichloroethene		ND	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

cont....

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-018/9/90227

ANALYSIS NO.: A9022807-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241, MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	590	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nitrosodimethylamine	ND	20
Bicycloheptadiene	510	10
Dimethyldisulfide	ND	10
Dicyclopentadiene	800*	400

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-052/23/90227

ANALYSIS NO.: A9022807-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241,
MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	4
Chloromethane		ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	4
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		180	10
Trichlorofluoromethane	Freon 11	ND	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	160	4
Acetone		ND	20
Methylene Chloride		26	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		35	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		ND	6
Chloroform		130,000*	800
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		84	4
Benzene		21	6
1,2-Dichloroethane		13	4
Trichloroethene		30	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

cont....

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LABORATORY REPORT

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Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-052/23/90227

ANALYSIS NO.: A9022807-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241, MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	13	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	840	6
Tetrachloroethene	ND	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nitrosodimethylamine	ND	20
Bicycloheptadiene	2000*	400
Dimethyldisulfide	ND	10
Dicyclopentadiene	800*	400

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-003/20/90227

ANALYSIS NO.: A9022807-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241,
MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	51	4
Chloromethane		ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	4
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		ND	10
Trichlorofluoromethane	Freon 11	35	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	74	4
Acetone		ND	20
Methylene Chloride		ND	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		ND	6
Chloroform		1400*	80
1,1,1,-Trichloroethane		14	4
Carbon Tetrachloride		ND	4
Benzene		ND	6
1,2-Dichloroethane		ND	4
Trichloroethene		ND	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

cont....

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LABORATORY REPORT

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Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-003/20/90227

ANALYSIS NO.: A9022807-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241, MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	67	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nitrosodimethylamine	ND	20
Bicycloheptadiene	ND	10
Dimethyldisulfide	ND	10
Dicyclopentadiene	ND	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-059/5/90227

ANALYSIS NO.: A9022807-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241, MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	4
Chloromethane		ND	5
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	4
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		24	10
Trichlorofluoromethane	Freon 11	ND	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	100	4
Acetone		ND	20
Methylene Chloride		ND	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		ND	6
Chloroform		5000*	80
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		ND	4
Benzene		7.0	6
1,2-Dichloroethane		ND	4
Trichloroethene		ND	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

cont....

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-059/5/90227

ANALYSIS NO.: A9022807-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90, 8/30/90*
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241, MS101-9008301*

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	ND	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	300	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	ND	5
Total Xylenes	ND	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nitrosodimethylamine	ND	20
Bicycloheptadiene	230	10
Dimethyldisulfide	ND	10
Dicyclopentadiene	1400*	400

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9022807
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008241

QC SUMMARY
Volatile Organics by GCMS

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	93	91	2
1,1 Dichloroethene	102	102	0
Trichloroethene	94	92	2
Toluene	104	102	1
1,1,2,2-Tetrachlorethane	100	94	7
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

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143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9022807
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/30/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9008301

QC SUMMARY
Volatile Organics by GCMS

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	91	89	2
1,1 Dichloroethene	96	93	4
Trichloroethene	96	92	5
Toluene	100	96	4
1,1,2,2-Tetrachlorethane	96	95	1
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-002/9C/90227

ANALYSIS NO.: A9022807-001
ANALYSES: Tentative Identified Compounds (TIC's)
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound	Results ppb (vol/vol)
Oxygenated Alkane (C2)	20
Alkene (C7)	100
Hexane	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-018/9/90227

ANALYSIS NO.: A9022807-002
ANALYSES: Tentative Identified Compounds (TIC's)
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound	Results ppb (vol/vol)
Oxygenated Alkane (C2)	40
Alkene (C7)	100
Oxygenated Alkane (C6)	100
Hexane	10

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-052/23/90227

ANALYSIS NO.: A9022807-003
ANALYSES: Tentative Identified Compounds (TIC's)
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound	Results ppb (vol/vol)
Alkane (C6)	10
Alkene (C7)	70
Hexane	400

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-003/20/90227

ANALYSIS NO.: A9022807-004
ANALYSES: Tentative Identified Compounds (TIC's)
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

ND (10) ppb (vol/vol)

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-059/5/90227

ANALYSIS NO.: A9022807-005
ANALYSES: Tentative Identified Compounds (TIC's)
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/24/90
SAMPLE TYPE: Air

Tentatively Identified Compounds

Compound		Results ppb (vol/vol)
Oxygenated Alkane (C2)		700
Chlorinated Alkane (C3)		20
Alkane (C6)		90
Alkane (C6)		80
2,3-Dimethylpentane	CAS 565593	500
Isopropyl Cyclobutane		300
Oxygenated Alkene (C7)		10

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LABORATORY REPORT

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Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9022807-001/005
ANALYSES: Fixed Gas (ASTM-D1946)
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/17/90, 8/23/90*
SAMPLE TYPE: Air

Fixed Gas

	Results	
Sample Identification	Methane ppm (vol/vol)	Carbon Dioxide % (vol/vol)
A-002/9C/90227	240	12
A-018/9/90227	130	7.0
A-052/23/90227	37	9.8
* A-003/20/90227	60	5.8
* A-059/5/90227	60	7.4

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9022807-001/005
ANALYSES: Total Hydrocarbons as Methane
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
DATE ANALYZED: 8/17/90, 8/23/90*
SAMPLE TYPE: Air

Total Hyrocarbons as Methane

Sample Identification	Results ppm (vol/vol)
A-002/9C/90227	270
A-018/9/90227	150
A-052/23/90227	180
* A-003/20/90227	57
* A-059/5/90227	100

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LABORATORY REPORT

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Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9022807-001/005
DATE SAMPLED: 8/15/90
DATE SAMPLE REC'D: 8/16/90
SAMPLE TYPE: Air

Calculation of Total Non Methane Hydrocarbons

	Results ppm (vol/vol)	
Sample Identification	TNMHC's as Methane *	TNMHC's as Hexane **
A-002/9C/90227	30	8
A-018/9/90227	20	5
A-052/23/90227	140	35
A-003/20/90227	ND	ND
A-059/5/90227	40	10

* Calculated by subtracting the methane results from the Total Hydrocarbons as methane result.

** Calculated by using the detector response to hexane which is 4 times greater than it is for methane.

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October 15, 1990

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9024104-001/005
ANALYSES: Volatile Organics by GCMS - EPA TO14, Tentatively Identified Compounds (TICs)
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90

PROJECT: IRA-F

Enclosed with this letter is the report on the chemical and physical analyses on the samples from ANALYSIS NO: A9024104-001/005 shown above.

The samples were received by ENSECO Air Toxics Laboratory, intact and with the chain-of-custody record attached.

The chain-of-custody requested analysis for Total Nomethane Hydrocarbons as Methane and Methane. However, due to an inadvertent error, these analyses were not performed.

Please note that ND means not detection at the detection limit expressed.

REVIEWED

APPROVED

The Report Cover Letter is an integral part of this report.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-016/1/90240

ANALYSIS NO.: A9024104-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111, MS101-9009121

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane-------------------Freon 12----	ND	4
Chloromethane	15,000*	60
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	4
Vinyl Chloride	ND	5
Bromomethane------------------------------------	110	6
Chloroethane	98	10
Trichlorofluoromethane------------------Freon 11----	6.1	2
cis-1,2-Dichloroethene	ND	4
Carbon Disulfide--------------------------------	ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	4
Acetone--	4000*	250
Methylene Chloride	ND	8
trans-1,2-Dichloroethene------------------------	ND	8
1,1-Dichloroethane	ND	5
Vinyl Acetate-----------------------------------	ND	5
1,1-Dichloroethene	ND	4
2-Butanone--------------------------------------	180	6
Chloroform	21	4
1,1,1,-Trichloroethane--------------------------	ND	4
Carbon Tetrachloride	ND	4
Benzene---	12	6
1,2-Dichloroethane	ND	4
Trichloroethene---------------------------------	ND	5
1,2-Dichloropropane	ND	16
Bromodichloromethane----------------------------	ND	4
cis-1,3-Dichloropropene	ND	6
4-Methyl-2-Pentanone----------------------------	30	6

cont...

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-016/1/90240

ANALYSIS NO.: A9024104-001
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111, MS101-9009121

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	70	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	ND	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	6.9	5
Ethylbenzene	6.5	5
Total Xylenes	41	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	12	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nitrosodimethylamine	ND	10
Bicycloheptadiene	35	10
Dimethyldisulfide	2500*	250
Dicyclopentadiene	85	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-001/1C/90240

ANALYSIS NO.: A9024104-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111,
MS101-9009121

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	ND	4
Chloromethane		15,000*	60
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	ND	4
Vinyl Chloride		ND	5
Bromomethane		110	6
Chloroethane		95	10
Trichlorofluoromethane	Freon 11	ND	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	ND	4
Acetone		4100*	250
Methylene Chloride		ND	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		ND	4
2-Butanone		170	6
Chloroform		17	4
1,1,1,-Trichloroethane		ND	4
Carbon Tetrachloride		ND	4
Benzene		8.9	6
1,2-Dichloroethane		ND	4
Trichloroethene		ND	5
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		28	6

cont..

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-001/1C/90240

ANALYSIS NO.: A9024104-002
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111, MS101-9009121

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	59	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	ND	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	7.6	5
Ethylbenzene	5.9	5
Total Xylenes	36	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	ND	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nitrosodimethylamine	ND	10
Bicycloheptadiene	34	10
Dimethyldisulfide	2500*	250
Dicyclopentadiene	88	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-040/2/90240

ANALYSIS NO.: A9024104-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111, MS101-9009121

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	4
Chloromethane	14,000*	60
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	4
Vinyl Chloride	ND	5
Bromomethane--------------------------------------	97	6
Chloroethane	98	10
Trichlorofluoromethane------------------Freon 11----	ND	2
cis-1,2-Dichloroethene	ND	4
Carbon Disulfide----------------------------------	ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	4
Acetone---	4300*	250
Methylene Chloride	ND	8
trans-1,2-Dichloroethene--------------------------	ND	8
1,1-Dichloroethane	ND	5
Vinyl Acetate-------------------------------------	ND	5
1,1-Dichloroethene	ND	4
2-Butanone--	170	6
Chloroform	25	4
1,1,1,-Trichloroethane----------------------------	ND	4
Carbon Tetrachloride	ND	4
Benzene---	8.9	6
1,2-Dichloroethane	ND	4
Trichloroethene-----------------------------------	ND	5
1,2-Dichloropropane	ND	16
Bromodichloromethane------------------------------	ND	4
cis-1,3-Dichloropropene	ND	6
4-Methyl-2-Pentanone------------------------------	25	6

cont...

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-040/2/90240

ANALYSIS NO.: A9024104-003
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111, MS101-9009121

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	97	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	9.6	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	7.5	5
Ethylbenzene	5.5	5
Total Xylenes	33	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	9.4	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	12	10
N-Nitrosodimethylamine	ND	10
Bicycloheptadiene	39	10
Dimethyldisulfide	3400*	250
Dicyclopentadiene	130	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-007/3/90240

ANALYSIS NO.: A9024104-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111, MS101-9009121

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane------------------Freon 12----	ND	4
Chloromethane	13,000*	60
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane--Freon 114---	ND	4
Vinyl Chloride	ND	5
Bromomethane--	83	6
Chloroethane	98	10
Trichlorofluoromethane------------------Freon 11----	ND	2
cis-1,2-Dichloroethene	ND	4
Carbon Disulfide------------------------------------	ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane Freon 113	ND	4
Acetone---	4100*	250
Methylene Chloride	ND	8
trans-1,2-Dichloroethene----------------------------	ND	8
1,1-Dichloroethane	ND	5
Vinyl Acetate---------------------------------------	ND	5
1,1-Dichloroethene	ND	4
2-Butanone--	160	6
Chloroform	30	4
1,1,1,-Trichloroethane------------------------------	ND	4
Carbon Tetrachloride	ND	4
Benzene---	9.1	6
1,2-Dichloroethane	ND	4
Trichloroethene-------------------------------------	ND	5
1,2-Dichloropropane	ND	16
Bromodichloromethane--------------------------------	ND	4
cis-1,3-Dichloropropene	ND	6
4-Methyl-2-Pentanone--------------------------------	27	6

cont...

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-007/3/90240

ANALYSIS NO.: A9024104-004
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111, MS101-9009121

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	130	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	10	6
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	7.1	5
Ethylbenzene	6.0	5
Total Xylenes	35	10
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	ND	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	18	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	13	10
N-Nitrosodimethylamine	ND	10
Bicycloheptadiene	43	10
Dimethyldisulfide	1400*	250
Dicyclopentadiene	150	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-060/P-S/90240

ANALYSIS NO.: A9024104-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/12/90,9/15/90,9/17/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9009121, MS101-9009151, MS101-9009171

Volatile Organics by GCMS - EPA T014

Parameter		Results ppb(v/v)	Detection Limit
Dichlorodifluoromethane	Freon 12	280,000*	5000
Chloromethane		540,000*	7000
1,2,-Dichloro-1,1,2,2-Tetrafluoroethane	Freon 114	730,000*	5000
Vinyl Chloride		ND	5
Bromomethane		ND	6
Chloroethane		120	10
Trichlorofluoromethane	Freon 11	48	2
cis-1,2-Dichloroethene		ND	4
Carbon Disulfide		ND	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	Freon 113	ND	4
Acetone		500	10
Methylene Chloride		180	8
trans-1,2-Dichloroethene		ND	8
1,1-Dichloroethane		ND	5
Vinyl Acetate		ND	5
1,1-Dichloroethene		35	4
2-Butanone		380	6
Chloroform		310	4
1,1,1,-Trichloroethane		9300*	200
Carbon Tetrachloride		250	4
Benzene		ND	6
1,2-Dichloroethane		ND	4
Trichloroethene		18,000*	250
1,2-Dichloropropane		ND	16
Bromodichloromethane		ND	4
cis-1,3-Dichloropropene		ND	6
4-Methyl-2-Pentanone		ND	6

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-060/P-S/90240

ANALYSIS NO.: A9024104-005
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/12/90, 9/17/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9009121, MS101-9009171

Volatile Organics by GCMS - EPA T014

Parameter	Results ppb(v/v)	Detection Limit
Toluene	280	6
trans-1,3-Dichloropropene	ND	6
1,1,2-Trichloroethane	ND	6
Tetrachloroethene	13,000*	300
2-Hexanone	ND	10
Dibromochloromethane	ND	6
1,2-Dibromoethane	ND	4
Chlorobenzene	ND	5
Ethylbenzene	640	5
Total Xylenes	3100*	500
Styrene	ND	14
Bromoform	ND	4
1,1,2,2-Tetrachloroethane	ND	8
Benzyl Chloride	ND	4
4-Ethyl Toluene	14	8
1,3,5-Trimethylbenzene	ND	5
1,2,4-Trimethylbenzene	15	6
1,3-Dichlorobenzene	ND	6
1,4-Dichlorobenzene	ND	8
1,2-Dichlorobenzene	ND	10
1,2,4-Trichlorobenzene	ND	14
Hexachlorobutadiene	ND	10
N-Nitrosodimethylamine	ND	10
Bicycloheptadiene	ND	10
Dimethyldisulfide	410	10
Dicyclopentadiene	ND	10

* The sample was run a second time at another dilution level to quantitate the high concentration compounds.

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9024104
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90
SAMPLE TYPE: Air
QC BATCH NO.: MS201-9009111

QC SUMMARY
Volatile Organics by GCMS

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	104	100	3
1,1 Dichloroethene	111	108	3
Trichloroethene	102	97	6
Toluene	106	109	2
1,1,2,2-Tetrachlorethane	98	105	7
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9024104
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/15/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9009151

QC SUMMARY
Volatile Organics by GCMS

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	94	94	0
1,1 Dichloroethene	95	99	4
Trichloroethene	96	94	3
Toluene	93	93	1
1,1,2,2-Tetrachlorethane	101	102	1
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9024104
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/12/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9009121

QC SUMMARY
Volatile Organics by GCMS

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	99	97	2
1,1 Dichloroethene	108	108	0
Trichloroethene	102	105	3
Toluene	108	112	4
1,1,2,2-Tetrachlorethane	102	92	11
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

ANALYSIS NO.: A9024104
ANALYSES: Volatile Organics by GCMS - EPA T014
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/17/90
SAMPLE TYPE: Air
QC BATCH NO.: MS101-9009171

QC SUMMARY
Volatile Organics by GCMS

Compounds	Laboratory Control Sample % Recovery	Duplicate Control Sample % Recovery	RPD
Methylene Chloride	99	96	3
1,1 Dichloroethene	92	91	1
Trichloroethene	95	94	1
Toluene	95	97	3
1,1,2,2-Tetrachlorethane	105	106	1
Limits	80 - 115	80 - 115	20

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-016/1/90240

ANALYSIS NO.: A9024104-001
ANALYSES: Tentatively Identified Compounds (TICs)
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air

Tentatively Identified Compunds

Compound	Results ppb (vol/vol)
2-Chloropropane	20
Oxygenated Alkane (C3)	1000
2-propanol	90
Nitrogenated Alkane (C4)	10
Alkene (C7)	40
Disulfonated Oxygenated Alkane (C4)	200

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-001/1C/90240

ANALYSIS NO.: A9024104-002
ANALYSES: Tentatively Identified Compounds (TICs)
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air

Tentatively Identified Compunds

Compound	Results ppb (vol/vol)
2-Chloropropane	20
Iodomethane	50
2-propanol	90
Alkene (C7)	40
Acetic Acid	10
N,N-dimethyl Acetamide	20
Disulfonated Oxygenated Alkane (C4)	200

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A040/2/90240

ANALYSIS NO.: A9024104-003
ANALYSES: Tentatively Identified Compounds (TICs)
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air

Tentatively Identified Compunds

Compound	Results ppb (vol/vol)
Iodomethane	40
Nitrogenated Alkane (C2)	200
Oxygenated Alkane (C3)	1000
2-propanol	100
Nitrogenated Alkane (C4)	10
Alkene (C7)	20
Acetic Acid	20
Nitrogenated Alkane (C3)	10
Disulfonated Oxygenated Alkane (C4)	200
Cycloalkene (C7)	10
Cycloalkene (C7)	10

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-007/3/90240

ANALYSIS NO.: A9024104-004
ANALYSES: Tentatively Identificed Compounds (TICs)
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/11/90, 9/12/90
SAMPLE TYPE: Air

Tentatively Identified Compunds

Compound	Results ppb (vol/vol)
2-Chloropropane	20
Iodomethane	40
Oxygenated Alkane (C3)	1000
2-propanol	80
Acetic Acid	40
Alkane ester phosphonic acid	40
Disulfonated Oxygenated Alkane (C4)	200
Cycloalkene (C7)	10
Cycloalkene (C7)	10

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LABORATORY REPORT

EBASCO ENVIRONMENTAL SERVICES
143 Union Blvd., Ste. 1010
Lakewood, CO 80228-1824
ATTN: MR. BRUCE MACDONALD

Sample ID: A-060/P-S/90240

ANALYSIS NO.: A9024104-005
ANALYSES: Tentatively Identified Compounds (TICs)
DATE SAMPLED: 8/28/90
DATE SAMPLE REC'D: 8/29/90
DATE ANALYZED: 9/12/90,9/15/90,9/17/90
SAMPLE TYPE: Air

Tentatively Identified Compunds

Compound	Results ppb (vol/vol)
Chlorinated Fluorinated Ethane	300
Oxygenated Alkane (C3)	10
1-methylethenyl Benzene	10
Oxygenated Alkyl Benzene	10
1-phenylethanone	10

Appendix F

IRA-F Collocated Sample Data Listing

Ebasco Services Incorporated
Listing of TSP concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	FC2	FC2D	TSP % Diff
05/10/89	37.21	37.99	2.07
05/22/89	49.58	49.97	0.78
06/03/89	11.63	12.89	10.28
06/15/89	37.85	39.31	3.78
06/27/89	34.91	37.30	6.62
07/09/89	32.59	36.71	11.89
07/21/89	89.01	96.35	7.92
08/14/89	40.10	39.68	-1.05
08/26/89	43.82	45.45	3.65
09/07/89	66.67	69.72	4.47
09/19/89	30.31	29.87	-1.46
10/01/89	81.20	81.63	0.53
10/13/89	47.82	47.57	-0.52
10/25/89	116.69	122.28	4.68
11/06/89	31.76	31.67	-0.28
11/18/89	32.71	34.47	5.24
11/30/89	48.29	49.75	2.98
12/12/89	25.03	26.21	4.61
12/24/89	22.66	25.30	11.01
01/05/90	36.65	37.39	2.00
01/17/90	27.66	21.91	-23.20
01/29/90	23.26	22.60	-2.88
02/10/90	28.18	27.15	-3.72
02/22/90	25.52	26.65	4.33
03/18/90	5.99	6.12	2.15
03/30/90	15.01	15.09	0.53
04/11/90	38.20	39.11	2.35
04/23/90	25.92	27.21	4.86
05/05/90	18.01	19.08	5.77
05/17/90	20.56	20.96	1.93
05/29/90	45.81	50.29	9.32
06/10/90	44.71	47.57	6.20
06/22/90	58.26	58.68	0.72
07/04/90	28.06	26.79	-4.63
07/16/90	49.23	47.80	-2.95
07/28/90	45.80	44.50	-2.88
08/09/90	67.30	72.91	8.00
08/22/90	72.28	75.31	4.11
09/02/90	37.21	37.75	1.44
09/14/90	219.55	220.16	0.28
09/26/90	33.60	32.21	-4.22

Number of valid pairs:	41
Mean % Diff:	2.11
Std of % Diff:	5.80
Lower 95 % Conf. Limit:	-9.26
Upper 95 % Conf. Limit:	13.49

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of Metals concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	Arsenic FC2	Arsenic FC2D	Arsenic % Diff	Cadmium FC2	Cadmium FC2D	Cadmium % Diff	Chromium FC2	Chromium FC2D	Chromium % Diff	Copper FC2	Copper FC2D	Copper % Diff
05/10/89	0.0005	0.0005	0.00	ND	0.0004	N/A	ND	ND	N/A	0.0269	0.118	125.74
05/22/89	0.0006	0.0004	-40.00	0.0043	0.0029	-38.89	ND	ND	N/A	0.161	0.229	34.87
06/03/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.0659	0.077	15.54
06/15/89	ND	ND	N/A	0.0011	0.001	-9.52	ND	ND	N/A	0.122	0.192	44.59
06/27/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.0953	0.169	55.77
07/09/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.152	GT	N/A
07/21/89	0.0005	0.0004	-22.22	ND	ND	N/A	ND	ND	N/A	0.0746	0.115	42.62
08/14/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.0709	0.0563	-22.96
10/01/89	0.0004	0.0004	0.00	0.0007	0.0006	-15.38	ND	ND	N/A	0.099	0.056	-55.48
10/25/89	0.001	0.001	0.00	ND	0.0004	N/A	ND	ND	N/A	0.14	0.076	-59.26
11/06/89	ND	0.0004	N/A	ND	ND	N/A	ND	ND	N/A	0.12	0.057	-71.19
11/18/89	ND	0.0004	N/A	ND	ND	N/A	ND	ND	N/A	0.14	0.11	-24.00
11/30/89	0.0004	0.0005	22.22	ND	ND	N/A	ND	ND	N/A	0.21	0.15	-33.33
12/12/89	0.0004	ND	N/A	0.0038	0.004	5.13	ND	ND	N/A	0.056	0.053	-5.50
12/24/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.062	0.14	77.23
01/05/90	0.0005	0.0005	0.00	ND	ND	N/A	ND	ND	N/A	0.096	0.087	-9.84
01/17/90	0.0035	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.062	0.045	-31.78
01/29/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.048	0.039	-20.69
02/10/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.031	0.03	-3.28
02/22/90	0.0013	0.0016	20.69	ND	ND	N/A	ND	ND	N/A	0.091	0.09	-1.10
03/06/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
03/18/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.045	0.061	30.19
03/30/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.051	0.099	64.00
04/11/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.039	0.058	39.18
04/23/90	0.0007	0.0007	0.00	ND	ND	N/A	ND	ND	N/A	0.049	0.11	76.73
05/05/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.084	0.14	50.00
05/17/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.097	0.19	64.81
05/29/90	0.0007	0.0006	-15.38	ND	ND	N/A	ND	ND	N/A	0.078	0.12	42.42
06/10/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.038	0.085	76.42
06/22/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.088	0.093	5.52
07/04/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.082	0.1	19.78
07/16/90	ND	ND	N/A	0.0004	0.0004	0.00	ND	ND	N/A	0.099	0.071	-32.94
07/28/90	ND	ND	N/A	0.0006	0.0013	73.68	ND	ND	N/A	0.071	0.1	33.92
08/09/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.18	0.19	5.41
08/22/90	0.0008	0.001	22.22	ND	ND	N/A	ND	ND	N/A	0.17	0.14	-19.35
09/02/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.11	0.086	-24.49
09/14/90	0.001	0.0011	9.52	ND	ND	N/A	ND	ND	N/A	0.15	0.11	-30.77
09/26/90	ND	ND	N/A	0.0017	0.0017	0.00	ND	ND	N/A	0.12	0.1	-18.18
Number of valid pairs:			12			7			0			36
Mean % Diff:			-0.25			2.15			N/A			12.24
Std of % Diff:			18.67			34.79			N/A			45.33
Lower 95 % Conf. Limit:			-36.85			-66.05			N/A			-76.60
Upper 95 % Conf. Limit:			36.36			70.34			N/A			101.08

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected; GT - Greater than upper certified reporting limit
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of Metals concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

	Lead			Zinc		
Sample Date	FC2	FC2D	% Diff	FC2	FC2D	% Diff
05/10/89	0.0493	0.0502	1.81	0.0183	0.021	13.74
05/22/89	0.0268	0.0176	-41.44	0.0268	0.028	4.38
06/03/89	ND	ND	N/A	0.0084	0.0095	12.29
06/15/89	0.011	0.0091	-18.91	0.0184	0.0186	1.08
06/27/90	0.0119	0.014	16.22	0.0185	0.0185	0.00
07/09/89	0.0067	ND	N/A	0.02	0.0232	14.81
07/21/89	0.005	0.0089	56.12	0.014	0.0178	23.90
08/14/89	0.0083	0.0068	-19.87	0.0213	0.0196	-8.31
10/01/89	0.0074	0.0089	18.40	0.019	0.022	14.63
10/25/89	0.038	0.038	0.00	0.06	0.061	1.65
11/06/89	0.012	0.013	8.00	0.044	0.04	-9.52
11/18/89	0.012	0.01	-18.18	0.022	0.024	8.70
11/30/89	0.027	0.029	7.14	0.043	0.046	6.74
12/12/89	0.014	0.012	-15.38	0.03	0.025	-18.18
12/24/89	0.011	0.008	-31.58	0.011	0.01	-9.52
01/05/90	0.014	0.017	19.35	0.024	0.023	-4.26
01/17/90	0.012	0.0059	-68.16	0.022	0.013	-51.43
01/29/90	0.0076	ND	N/A	0.013	0.013	0.00
02/10/90	0.0072	0.0061	-16.54	0.016	0.015	-6.45
02/22/90	0.011	0.013	16.67	0.022	0.022	0.00
03/06/90	ND	ND	N/A	0.0035	0.0037	5.56
03/18/90	ND	ND	N/A	ND	0.0056	N/A
03/30/90	0.0072	0.0055	-26.77	0.012	0.012	0.00
04/11/90	ND	ND	N/A	0.014	0.013	-7.41
04/23/90	ND	0.0057	N/A	0.016	0.019	17.14
05/05/90	0.0052	0.0049	-5.94	0.013	0.017	26.67
05/17/90	0.0073	0.0052	-33.60	0.02	0.017	-16.22
05/29/90	0.0074	ND	N/A	0.015	0.015	0.00
06/10/90	ND	0.0054	N/A	0.011	0.013	16.67
06/22/90	ND	0.0094	N/A	0.019	0.014	-30.30
07/04/90	0.0075	ND	N/A	0.0086	0.0081	-5.99
07/16/90	0.012	0.013	8.00	0.03	0.027	-10.53
07/28/90	0.0079	0.0086	8.48	0.018	0.014	-25.00
08/09/90	0.0095	0.013	31.11	0.029	0.031	6.67
08/22/90	0.013	0.016	20.69	0.041	0.036	-12.99
09/02/90	0.0056	0.0067	17.89	0.019	0.014	-30.30
09/14/90	0.013	0.012	-8.00	0.047	0.04	-16.09
09/26/90	0.012	0.011	-8.70	0.025	0.023	-8.33
Number of valid pairs:			27			37
Mean % Diff:			-3.08			-2.60
Std of % Diff:			25.64			16.08
Lower 95 % Conf. Limit:			-53.33			-34.11
Upper 95 % Conf. Limit:			47.17			28.91

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected; GT - Greater than upper certified reporting limit
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of DCP concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	Aldrin			Chlordane			Dieldrin			Endrin		
	FC2	FC2D	% Diff	FC2	FC2D	% Diff	FC2	FC2D	% Diff	FC2	FC2D	% Diff
05/10/89	0.0103	0.0088	-15.71	0.0011	0.001	-9.52	0.0293	0.0296	1.02	0.0032	0.0034	6.06
05/22/89	0.0006	0.0004	-40.00	0.0004	0.0005	22.22	0.0074	0.007	-5.56	0.0012	0.001	-18.18
06/03/89	0.0011	0.0009	-20.00	0.0006	0.0006	0.00	0.0221	0.0237	6.99	0.0023	0.0025	8.33
07/09/89	ND	ND	N/A	ND	ND	N/A	0.0022	0.0022	0.00	0.0007	0.0006	-15.38
07/21/89	ND	ND	N/A	0.0004	ND	N/A	0.0019	0.0017	-11.11	0.0005	0.0004	-22.22
08/14/89	0.0027	0.0026	-3.77	0.0012	0.0011	-8.70	0.0444	0.0424	-4.61	0.0027	0.0026	-3.77
08/26/89	ND	ND	N/A	ND	ND	N/A	0.0027	0.0033	20.00	0.0004	0.0004	0.00
09/07/89	ND	ND	N/A	ND	ND	N/A	0.0015	0.0014	-6.90	ND	ND	N/A
09/19/89	0.0008	0.0009	11.76	ND	ND	N/A	0.0055	0.0057	3.57	ND	ND	N/A
10/01/89	ND	ND	N/A	ND	ND	N/A	0.0012	0.0011	-8.70	ND	ND	N/A
10/13/89	ND	ND	N/A	ND	ND	N/A	0.0007	0.0007	0.00	ND	ND	N/A
10/25/89	0.0049	0.0045	-8.51	ND	ND	N/A	0.002	0.0018	-10.53	0.0003	ND	N/A
11/06/89	0.0008	ND	N/A	ND	ND	N/A	0.0044	0.0045	2.25	0.0005	0.0005	0.00
11/18/89	ND	ND	N/A	ND	ND	N/A	0.0003	0.0004	28.57	ND	ND	N/A
12/12/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
12/24/89	ND	ND	N/A	ND	ND	N/A	0.001	0.0001	-163.64	ND	ND	N/A
01/05/90	ND	ND	N/A	ND	ND	N/A	0.0021	0.0022	4.65	ND	ND	N/A
01/17/90	ND	ND	N/A	ND	ND	N/A	0.0006	0.0007	15.38	ND	ND	N/A
01/29/90	ND	ND	N/A	ND	ND	N/A	0.0006	0.0006	0.00	ND	ND	N/A
02/10/90	ND	ND	N/A	ND	ND	N/A	0.0007	0.0007	0.00	ND	ND	N/A
02/22/90	ND	ND	N/A	ND	ND	N/A	0.0061	0.006	-1.65	0.0009	0.0009	0.00
03/06/90	ND	ND	N/A	0.0004	0.0004	0.00	0.0071	0.0061	-15.15	0.0011	0.001	-9.52
03/18/90	ND	ND	N/A	ND	ND	N/A	0.0006	0.0007	15.38	0.0009	0.0009	0.00
03/30/90	ND	ND	N/A	ND	ND	N/A	0.0038	0.0041	7.59	0.0007	0.0008	13.33
04/11/90	ND	ND	N/A	ND	ND	N/A	0.0036	0.0041	12.99	0.0008	0.0008	0.00
04/23/90	ND	ND	N/A	0.0004	0.0004	0.00	0.0046	0.005	8.33	0.0007	0.0008	13.33
05/05/90	N/A	ND	N/A	N/A	ND	N/A	N/A	0.0057	N/A	N/A	0.0008	N/A
05/17/90	ND	ND	N/A	ND	ND	N/A	0.0026	0.0025	-3.92	0.0005	0.0004	-22.22
05/29/90	0.0068	0.0069	1.46	0.0011	0.0011	0.00	0.065	0.064	-1.55	0.0063	0.0064	1.57
06/10/90	0.0005	0.0007	33.33	ND	ND	N/A	0.0052	0.0067	25.21	0.0007	0.0008	13.33
06/22/90	ND	ND	N/A	ND	ND	N/A	0.0045	0.0046	2.20	0.0005	0.0005	0.00
07/04/90	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
07/16/90	ND	ND	N/A	0.0006	0.0006	0.00	0.0061	0.0052	-15.93	0.0008	0.0007	-13.33
07/28/90	ND	ND	N/A	0.0004	0.0005	22.22	0.0032	0.0031	-3.17	0.0006	0.0005	-18.18
08/09/90	ND	N/A	N/A	0.0007	N/A	N/A	0.0039	N/A	N/A	0.0005	N/A	N/A
08/22/90	0.03	0.027	-10.53	0.0023	ND	N/A	0.061	0.062	1.63	0.0049	0.0047	-4.17
09/02/90	0.0005	0.005	163.64	0.0016	0.0015	-6.45	0.047	0.042	-11.24	0.0031	0.0029	-6.67
09/14/90	0.0005	0.0004	-22.22	ND	ND	N/A	0.003	0.0034	12.50	0.0008	0.0008	0.00
09/26/90	0.0019	0.0024	23.26	0.0008	0.0008	0.00	0.033	0.035	5.88	0.0025	0.0027	7.69

	Aldrin % Diff	Chlordane % Diff	Dieldrin % Diff	Endrin % Diff
Number of valid pairs:	12	11	35	24
Mean % Diff:	9.39	1.80	-2.56	-2.92
Std of % Diff:	52.61	10.77	29.95	10.89
Lower 95 % Conf. Limit:	-93.73	-19.31	-61.27	-24.26
Upper 95 % Conf. Limit:	112.51	22.91	56.15	18.43

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of OCP concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	Isodrin FC2	Isodrin FC2D	Isodrin % Diff	PPDDE FC2	PPDDE FC2D	PPDDE % Diff	PPDDT FC2	PPDDT FC2D	PPDDT % Diff
05/10/89	0.0011	0.0106	162.39	ND	ND	N/A	ND	ND	N/A
05/22/89	0.0007	0.0006	-15.38	ND	ND	N/A	0.0004	ND	N/A
06/03/89	0.0004	0.0005	22.22	ND	ND	N/A	ND	ND	N/A
07/09/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
07/21/89	0.0004	ND	N/A	ND	ND	N/A	ND	ND	N/A
08/14/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
08/26/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
09/07/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
09/19/89	ND	ND	N/A	ND	ND	N/A	0.0006	0.0006	0.00
10/01/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
10/13/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
10/25/89	0.0004	0.0004	0.00	ND	ND	N/A	ND	ND	N/A
11/06/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
11/18/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
12/12/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
12/24/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
01/05/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
01/17/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
01/29/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
02/10/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
02/22/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
03/06/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
03/18/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
03/30/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
04/11/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
04/23/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
05/05/90	N/A	ND	N/A	N/A	ND	N/A	N/A	ND	N/A
05/17/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
05/29/90	ND	0.0005	N/A	ND	ND	N/A	0.0041	0.0038	-7.59
06/10/90	ND	ND	N/A	ND	ND	N/A	0.0004	ND	N/A
06/22/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
07/04/90	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
07/16/90	ND	ND	N/A	ND	ND	N/A	0.0004	ND	N/A
07/28/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
08/09/90	ND	N/A	N/A	ND	N/A	N/A	ND	N/A	N/A
08/22/90	0.0011	ND	N/A	ND	ND	N/A	0.0014	ND	N/A
09/02/90	ND	ND	N/A	ND	ND	N/A	0.0013	0.0012	-8.00
09/14/90	ND	ND	N/A	ND	ND	N/A	ND	0.0004	N/A
09/26/90	ND	ND	N/A	ND	ND	N/A	0.0009	0.001	10.53
Number of valid pairs:			4			0			4
Mean % Diff:			42.31			N/A			-1.27
Std of % Diff:			81.53			N/A			8.68
Lower 95 % Conf. Limit:			-117.49			N/A			-18.28
Upper 95 % Conf. Limit:			202.11			N/A			15.75

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of VOC concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	1,1,1-Trichloroethane FC2	FC2D	% Diff	1,1,2-Trichloroethane FC2	FC2D	% Diff	1,1-Dichloroethane FC2	FC2D	% Diff	1,2-Dichloroethane FC2	FC2D	% Diff
05/10/89	1.45	1.77	19.88	ND	ND	N/A	ND	ND	N/A	0.0426	0.103	82.97
06/03/89	0.731	0.979	29.01	ND	ND	N/A	ND	ND	N/A	0.0404	0.0576	35.10
06/15/89	0.968	1.53	45.00	ND	ND	N/A	ND	ND	N/A	0.0441	ND	N/A
06/27/89	0.902	1.64	58.06	ND	ND	N/A	ND	ND	N/A	0.0425	ND	N/A
07/09/89	0.393	0.394	0.25	ND	ND	N/A	ND	ND	N/A	0.0302	ND	N/A
07/21/89	0.747	0.763	2.12	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
08/14/89	1.11	0.909	-19.91	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
08/26/89	1.02	0.896	-12.94	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
09/07/89	0.601	0.761	23.49	ND	ND	N/A	ND	ND	N/A	0.0219	0.0377	53.02
09/19/89	1.23	1.34	8.56	ND	ND	N/A	ND	ND	N/A	0.0421	0.0334	-23.05
10/01/89	1.28	1.62	23.45	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
10/13/89	1.89	1.66	-12.96	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
10/25/89	3.72	3.83	2.91	ND	ND	N/A	ND	ND	N/A	0.028	ND	N/A
11/06/89	2.7	3.05	12.17	ND	ND	N/A	ND	ND	N/A	ND	0.17	N/A
11/18/89	1.98	1.45	-30.90	ND	ND	N/A	ND	ND	N/A	0.12	0.082	-37.62
11/30/89	4.17	4.33	3.76	ND	ND	N/A	ND	ND	N/A	0.21	ND	N/A
12/12/89	3.9	3.78	-3.13	ND	ND	N/A	ND	ND	N/A	0.25	0.24	-4.08
12/24/89	1.37	1.25	-9.16	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
01/05/90	3.03	2.58	-16.04	ND	ND	N/A	ND	ND	N/A	0.18	0.14	-25.00
01/17/90	3.52	0.09	-190.03	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
01/29/90	0.847	0.82	-3.24	ND	ND	N/A	ND	ND	N/A	0.086	0.085	-1.17
02/10/90	0.6	0.6	0.00	ND	ND	N/A	ND	ND	N/A	0.055	0.046	-17.82
02/22/90	1.74	1.79	2.83	ND	ND	N/A	ND	ND	N/A	0.12	0.13	8.00
03/06/90	0.53	0.52	-1.90	ND	ND	N/A	ND	ND	N/A	0.056	0.053	-5.50
03/12/90	1.14	0.671	-51.79	ND	ND	N/A	ND	ND	N/A	ND	0.081	N/A
04/11/90	0.582	0.441	-27.57	ND	ND	N/A	ND	ND	N/A	0.096	0.061	-44.59
04/23/90	1.06	0.796	-28.45	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
05/17/90	0.676	1.55	78.53	ND	ND	N/A	ND	ND	N/A	0.079	0.11	32.80
05/29/90	1.37	1.17	-15.75	ND	ND	N/A	ND	ND	N/A	0.095	0.076	-22.22
06/10/90	0.36	0.45	22.22	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
06/22/90	0.76	0.59	-25.19	ND	ND	N/A	ND	ND	N/A	0.068	0.032	-72.00
07/04/90	0.16	0.51	104.48	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
07/16/90	0.54	0.582	7.49	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
07/28/90	0.604	0.59	-2.35	ND	ND	N/A	ND	ND	N/A	0.071	0.065	-8.82
08/09/90	1.43	1.41	-1.41	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
09/02/90	0.617	0.512	-18.60	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A
09/14/90	0.708	0.653	-8.08	ND	ND	N/A	ND	ND	N/A	ND	0.026	N/A
09/26/90	1.03	1.02	-0.98	ND	ND	N/A	ND	ND	N/A	0.039	0.039	0.00
Number of valid pairs:			38			0			0			17
Mean % Diff:			-0.951			N/A			N/A			-2.940
Std of % Diff:			43.28			N/A			N/A			37.58
Lower 95 % Conf. Limit:			-85.78			N/A			N/A			-76.61
Upper 95 % Conf. Limit:			93.88			N/A			N/A			70.72

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected; GT - Greater than upper certified reporting limit
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of VOC concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	1,2-Dimethylbenzene FC2	FC2D	% Diff	Bicycloheptadiene FC2	FC2D	% Diff	Benzene FC2	FC2D	% Diff	Carbon Tetrachloride FC2	FC2D	% Diff
05/10/89	0.709	1.07	40.58	ND	ND	N/A	1.8	2.55	34.48	0.484	0.65	29.28
06/03/89	0.103	0.121	16.07	ND	ND	N/A	0.555	1.06	62.54	0.502	0.691	31.68
06/15/89	0.502	0.384	-26.64	ND	ND	N/A	0.981	1.69	53.09	0.391	0.684	54.51
06/27/89	0.639	0.755	16.64	ND	ND	N/A	0.96	1.51	44.53	0.226	0.5	75.48
07/09/89	0.42	0.355	-16.77	ND	ND	N/A	0.453	0.383	-16.75	0.137	0.0917	-39.62
07/21/89	0.222	0.273	20.61	ND	ND	N/A	0.722	0.677	-6.43	0.243	0.266	9.04
08/14/89	1.37	1.45	5.67	ND	ND	N/A	1.16	1.2	3.39	0.294	0.24	-20.22
08/26/89	0.599	0.502	-17.62	ND	ND	N/A	1.1	0.864	-24.03	0.291	0.245	-17.16
09/07/89	0.156	0.199	24.23	ND	ND	N/A	0.269	0.613	78.00	0.329	0.357	8.16
09/19/89	0.377	0.411	8.63	ND	ND	N/A	1.37	1.34	-2.21	0.422	0.46	8.62
10/01/89	0.865	0.378	-78.36	0.112	0.162	36.50	1.52	1.75	14.07	0.35	0.43	20.51
10/13/89	1.14	1.16	1.74	ND	ND	N/A	1.64	1.08	-41.18	0.35	0.33	-5.88
10/25/89	2.81	2.87	2.11	0.221	0.21	-5.10	GT	GT	N/A	0.927	0.975	5.05
11/06/89	1.38	1.68	19.61	0.076	0.073	-4.03	1.67	2.14	24.67	0.789	0.947	18.20
11/18/89	1.24	0.969	-24.54	0.05	0.049	-2.02	1.6	1.3	-20.69	0.639	0.539	-16.98
11/30/89	2.58	2.27	-12.78	0.11	0.164	39.42	2.7	2.29	-16.43	0.866	0.935	7.66
12/12/89	0.061	ND	N/A	0.093	0.064	-36.94	GT	1.61	N/A	1.19	1.13	-5.17
12/24/89	1.41	0.045	-187.63	ND	ND	N/A	2.77	3.16	13.15	0.923	0.859	-7.18
01/05/90	0.082	0.822	163.72	0.052	0.063	19.13	GT	GT	N/A	0.907	0.83	-8.87
01/17/90	1.69	0.044	-189.85	0.1	ND	N/A	3.17	0.16	-180.78	0.834	ND	N/A
01/29/90	0.33	0.3	-9.52	ND	ND	N/A	0.867	0.87	0.35	0.628	0.601	-4.39
02/10/90	0.16	0.17	6.06	ND	ND	N/A	0.615	0.611	-0.65	0.589	0.45	-26.76
02/22/90	1.21	1.12	-7.73	ND	0.057	N/A	1.64	0.268	-143.82	0.859	0.877	2.07
03/06/90	0.086	0.083	-3.55	ND	ND	N/A	0.546	0.452	-18.84	0.451	0.458	1.54
03/12/90	0.49	0.461	-6.10	ND	ND	N/A	1.5	1.47	-2.02	0.545	0.545	0.00
04/11/90	0.1	0.051	-64.90	ND	ND	N/A	0.863	0.937	8.22	0.793	0.404	-65.00
04/23/90	0.37	0.797	73.18	ND	ND	N/A	1.48	1.59	7.17	0.3	0.35	15.38
05/17/90	0.28	0.388	32.34	ND	ND	N/A	0.846	1.27	40.08	0.33	0.538	47.93
05/29/90	0.2	0.18	-10.53	ND	ND	N/A	0.877	0.649	-29.88	0.544	0.629	14.49
06/10/90	0.19	0.21	10.00	ND	ND	N/A	0.55	0.54	-1.83	0.208	0.26	22.22
06/22/90	0.33	0.3	-9.52	ND	ND	N/A	0.816	0.704	-14.74	0.3	0.24	-22.22
07/04/90	0.33	0.36	8.70	ND	ND	N/A	0.177	1.11	144.99	0.11	0.22	66.67
07/16/90	0.774	0.704	-9.47	ND	ND	N/A	0.869	0.794	-9.02	0.177	0.187	5.49
07/28/90	0.344	0.33	-4.15	ND	ND	N/A	0.967	0.94	-2.83	0.24	0.24	0.00
08/09/90	2.09	2.46	16.26	ND	0.05	N/A	1.66	2.41	36.86	0.25	0.28	11.32
09/02/90	0.18	0.034	-136.45	ND	ND	N/A	1	0.825	-19.18	0.31	0.272	-13.06
09/14/90	0.044	0.15	109.28	ND	ND	N/A	1.01	1	-1.00	0.32	0.29	-9.84
09/26/90	1.03	1.02	-0.98	0.048	0.052	8.00	1.37	1.36	-0.73	0.24	0.23	-4.26

	1,2-Dimethylbenzene	Bicycloheptadiene	Benzene	Carbon Tetrachloride
Number of valid pairs:	37	8	35	37
Mean % Diff:	-6.532	6.869	0.358	5.10
Std of % Diff:	64.66	24.93	54.14	27.37
Lower 95 % Conf. Limit:	-133.27	-41.99	-105.76	-48.54
Upper 95 % Conf. Limit:	120.21	55.72	106.48	58.74

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected; GT - Greater than upper certified reporting limit
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of VOC concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	Methylene Chloride FC2	Methylene Chloride FC2D	Methylene Chloride % Diff	Chloroform FC2	Chloroform FC2D	Chloroform % Diff	Chlorobenzene FC2	Chlorobenzene FC2D	Chlorobenzene % Diff	Dibromochloropropane FC2	Dibromochloropropane FC2D	Dibromochloropropane % Diff
05/10/89	0.623	0.528	-16.51	0.529	0.639	18.84	0.0699	0.107	41.94	ND	ND	N/A
06/03/89	0.252	0.344	30.87	0.116	0.189	47.87	ND	ND	N/A	ND	ND	N/A
06/15/89	0.334	0.648	63.95	0.0801	0.268	107.96	0.0505	ND	N/A	ND	ND	N/A
06/27/89	0.34	ND	N/A	0.097	0.0942	-2.93	ND	ND	N/A	ND	ND	N/A
07/09/89	0.426	0.358	-17.35	0.687	0.758	9.83	ND	ND	N/A	ND	ND	N/A
07/21/89	0.173	0.198	13.48	0.1	0.117	15.67	ND	ND	N/A	ND	ND	N/A
08/14/89	0.23	0.2	-13.95	0.142	0.218	42.22	ND	ND	N/A	ND	ND	N/A
08/26/89	0.408	0.314	-26.04	0.174	0.126	-32.00	ND	ND	N/A	ND	ND	N/A
09/07/89	0.141	0.181	24.84	0.209	0.314	40.15	ND	ND	N/A	ND	ND	N/A
09/19/89	0.514	0.651	23.52	0.42	0.503	17.98	ND	ND	N/A	ND	ND	N/A
10/01/89	0.879	0.997	12.58	1.5	1.68	11.32	ND	ND	N/A	ND	ND	N/A
10/13/89	0.873	1.18	29.91	0.809	0.65	-21.80	ND	ND	N/A	ND	ND	N/A
10/25/89	1.78	1.44	-21.12	1.82	1.81	-0.55	ND	ND	N/A	ND	ND	N/A
11/06/89	0.9	0.912	1.32	2.14	2.21	3.22	ND	ND	N/A	ND	ND	N/A
11/18/89	0.68	0.472	-36.11	0.714	0.712	-0.28	ND	ND	N/A	ND	ND	N/A
11/30/89	0.988	1.04	5.13	2.09	2	-4.40	ND	ND	N/A	ND	ND	N/A
12/12/89	0.938	1.17	22.01	1.49	1.67	11.39	ND	ND	N/A	ND	ND	N/A
12/24/89	0.599	0.27	-75.72	0.969	0.899	-7.49	ND	ND	N/A	ND	ND	N/A
01/05/90	1.98	1.57	-23.10	1.24	1.14	-8.40	ND	ND	N/A	ND	ND	N/A
01/17/90	1.14	0.21	-137.78	1.65	0.038	-191.00	ND	ND	N/A	ND	ND	N/A
01/29/90	0.23	0.2	-13.95	0.414	0.393	-5.20	ND	ND	N/A	ND	ND	N/A
02/10/90	0.18	0.18	0.00	0.124	0.136	9.23	ND	ND	N/A	ND	ND	N/A
02/22/90	0.511	0.495	-3.18	0.936	0.94	0.43	ND	ND	N/A	ND	ND	N/A
03/06/90	0.28	0.2	-33.33	0.094	0.094	0.00	ND	ND	N/A	ND	ND	N/A
03/12/90	0.22	0.22	0.00	0.095	0.09	-5.41	ND	ND	N/A	ND	ND	N/A
04/11/90	0.325	0.203	-46.21	0.17	0.091	-60.54	ND	ND	N/A	ND	ND	N/A
04/23/90	0.29	0.33	12.90	0.04	0.041	2.47	ND	ND	N/A	ND	ND	N/A
05/17/90	0.24	0.24	0.00	0.097	0.173	56.30	ND	ND	N/A	ND	ND	N/A
05/29/90	0.477	0.43	-10.36	0.1	0.324	105.66	0.045	0.04	-11.76	ND	ND	N/A
06/10/90	ND	0.06	N/A	0.027	0.038	33.85	ND	ND	N/A	ND	ND	N/A
06/22/90	0.15	0.146	-2.70	0.082	0.07	-15.79	ND	ND	N/A	ND	ND	N/A
07/04/90	ND	0.1	N/A	ND	0.23	N/A	ND	ND	N/A	ND	ND	N/A
07/16/90	0.24	0.24	0.00	0.21	0.2	-4.88	ND	ND	N/A	ND	ND	N/A
07/28/90	0.27	0.29	7.14	0.3	0.32	6.45	ND	ND	N/A	ND	ND	N/A
08/09/90	0.348	0.704	67.68	1.05	1.41	29.27	ND	ND	N/A	ND	ND	N/A
09/02/90	0.19	0.22	14.63	0.723	0.685	-5.40	ND	ND	N/A	ND	ND	N/A
09/14/90	0.34	0.32	-6.06	0.18	0.21	15.38	ND	ND	N/A	ND	ND	N/A
09/26/90	0.342	0.46	29.43	0.713	0.68	-4.74	ND	ND	N/A	ND	ND	N/A
Number of valid pairs:			35			37			2			0
Mean % Diff:			-3.545			5.802			15.09			N/A
Std of % Diff:			36.56			46.03			37.98			N/A
Lower 95 % Conf. Limit:			-70.20			-84.41			-59.35			N/A
Upper 95 % Conf. Limit:			68.11			96.02			89.53			N/A

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected; GT - Greater than upper certified reporting limit
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of VOC concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	Dicyclopentadiene FC2	Dicyclopentadiene FC2D	Dicyclopentadiene % Diff	Dimethyldisulfide FC2	Dimethyldisulfide FC2D	Dimethyldisulfide % Diff	Ethylbenzene FC2	Ethylbenzene FC2D	Ethylbenzene % Diff	Toluene FC2	Toluene FC2D	Toluene % Diff
05/10/89	ND	ND	N/A	ND	ND	N/A	0.551	0.8	36.86	GT	4.4	N/A
06/03/89	ND	ND	N/A	ND	ND	N/A	0.0789	0.0862	8.84	0.643	0.713	10.32
06/15/89	ND	ND	N/A	ND	ND	N/A	0.394	0.326	-18.89	1.54	2.6	51.21
06/27/89	ND	ND	N/A	ND	ND	N/A	0.414	0.457	9.87	1.8	2.5	32.56
07/09/89	ND	ND	N/A	ND	ND	N/A	0.312	0.219	-35.03	2.44	1.66	-38.05
07/21/89	ND	ND	N/A	ND	ND	N/A	0.149	0.175	16.05	1.22	1.19	-2.49
08/14/89	ND	ND	N/A	ND	ND	N/A	1.01	1.02	0.99	2.67	GT	N/A
08/26/89	ND	ND	N/A	ND	ND	N/A	0.458	0.345	-28.14	2.18	2.08	-4.69
09/07/89	ND	ND	N/A	ND	ND	N/A	0.102	0.141	32.10	0.783	0.916	15.66
09/19/89	ND	ND	N/A	ND	ND	N/A	0.323	0.377	15.43	GT	2.81	N/A
10/01/89	ND	ND	N/A	ND	ND	N/A	0.554	0.378	-37.77	GT	GT	N/A
10/13/89	ND	ND	N/A	ND	ND	N/A	0.821	0.83	1.09	GT	GT	N/A
10/25/89	ND	ND	N/A	ND	ND	N/A	2.67	2.62	-1.89	GT	GT	N/A
11/06/89	ND	ND	N/A	ND	ND	N/A	0.969	1.19	20.47	GT	GT	N/A
11/18/89	ND	ND	N/A	ND	ND	N/A	0.839	0.712	-16.38	GT	GT	N/A
11/30/89	ND	ND	N/A	ND	ND	N/A	1.91	1.74	-9.32	GT	GT	N/A
12/12/89	ND	ND	N/A	ND	ND	N/A	0.081	ND	N/A	GT	0.492	N/A
12/24/89	ND	ND	N/A	ND	ND	N/A	1.17	0.053	-182.67	GT	3.75	N/A
01/05/90	ND	ND	N/A	ND	ND	N/A	0.087	0.816	161.46	GT	GT	N/A
01/17/90	ND	ND	N/A	ND	ND	N/A	1.31	0.04	-188.15	3.89	0.2	-180.44
01/29/90	ND	ND	N/A	ND	ND	N/A	0.21	0.2	-4.88	1.08	1.07	-0.93
02/10/90	ND	ND	N/A	ND	ND	N/A	0.12	0.11	-8.70	0.607	0.592	-2.50
02/22/90	ND	ND	N/A	ND	ND	N/A	0.816	0.737	-10.17	6.38	6.67	4.44
03/06/90	ND	ND	N/A	ND	ND	N/A	0.081	0.071	-13.16	1.1	1.11	0.90
03/12/90	ND	ND	N/A	ND	ND	N/A	0.38	0.461	19.26	4.15	4.15	0.00
04/11/90	ND	ND	N/A	ND	ND	N/A	0.077	0.043	-56.67	0.643	0.37	-53.90
04/23/90	ND	ND	N/A	ND	ND	N/A	0.28	0.398	34.81	3.53	3.98	11.98
05/17/90	ND	ND	N/A	ND	ND	N/A	0.2	0.388	63.95	2.03	3.88	62.61
05/29/90	ND	ND	N/A	ND	ND	N/A	0.13	0.15	14.29	1.03	1.17	12.73
06/10/90	ND	ND	N/A	ND	ND	N/A	0.14	0.16	13.33	0.687	0.16	-124.44
06/22/90	ND	ND	N/A	ND	ND	N/A	0.24	0.22	-8.70	8.33	3.87	-73.11
07/04/90	ND	ND	N/A	ND	ND	N/A	0.24	0.25	4.08	1.07	1.84	52.92
07/16/90	ND	ND	N/A	ND	ND	N/A	0.399	0.352	-12.52	3.84	3.52	-8.70
07/28/90	ND	ND	N/A	ND	ND	N/A	0.3	0.31	3.28	2.6	2.64	1.53
08/09/90	ND	ND	N/A	ND	ND	N/A	1.39	1.41	1.43	10.5	10.7	1.89
09/02/90	ND	ND	N/A	ND	ND	N/A	0.25	0.073	-109.60	6.94	3.42	-67.95
09/14/90	ND	ND	N/A	ND	ND	N/A	0.07	0.16	78.26	6.76	6.67	-1.34
09/26/90	ND	ND	N/A	ND	ND	N/A	0.685	0.68	-0.73	6.85	6.8	-0.73

	Dicyclopentadiene	Dimethyldisulfide	Ethylbenzene	Toluene
Number of valid pairs:	0	0	37	26
Mean % Diff:	N/A	N/A	-5.608	-11.559
Std of % Diff:	N/A	N/A	59.94	52.95
Lower 95 % Conf. Limit:	N/A	N/A	-123.10	-115.34
Upper 95 % Conf. Limit:	N/A	N/A	111.88	92.22

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected; GT - Greater than upper certified reporting limit
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of VOC concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	Methylisobutyl-ketone			N-Nitroso-dimethylamine			Trans-1,2-dichloroethene			Tetrachloroethene		
	FC2	FC2D	% Diff	FC2	FC2D	% Diff	FC2	FC2D	% Diff	FC2	FC2D	% Diff
05/10/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.865	1.13	26.57
06/03/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.172	0.162	-5.99
06/15/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.487	0.426	-13.36
06/27/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	1.35	1.33	-1.49
07/09/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.542	0.377	-35.91
07/21/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.24	0.244	1.65
08/14/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.686	0.618	-10.43
08/26/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.599	0.502	-17.62
09/07/89	0.0388	0.0636	48.44	ND	ND	N/A	ND	ND	N/A	0.177	0.198	11.20
09/19/89	0.0214	0.0914	124.11	ND	ND	N/A	ND	ND	N/A	0.411	0.411	0.00
10/01/89	0.096	0.16	50.00	ND	ND	N/A	ND	ND	N/A	0.554	0.756	30.84
10/13/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	2.43	2.2	-9.94
10/25/89	0.877	1.13	25.21	ND	ND	N/A	ND	ND	N/A	2.6	2.59	-0.39
11/06/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	1.9	2.35	21.18
11/18/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	1.51	1.14	-27.92
11/30/89	0.29	0.28	-3.51	ND	ND	N/A	ND	ND	N/A	2.33	2.07	-11.82
12/12/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	1.81	0.21	-158.42
12/24/89	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.552	0.43	-24.85
01/05/90	ND	0.18	N/A	ND	ND	N/A	ND	ND	N/A	1.11	1.44	25.88
01/17/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	2.57	ND	N/A
01/29/90	0.038	0.037	-2.67	ND	ND	N/A	ND	ND	N/A	0.28	0.28	0.00
02/10/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.19	0.18	-5.41
02/22/90	0.12	0.14	15.38	ND	ND	N/A	ND	ND	N/A	0.816	0.737	-10.17
03/06/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.11	0.11	0.00
03/12/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.37	0.43	15.00
04/11/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.2	0.1	-66.67
04/23/90	0.081	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.353	0.398	11.98
05/17/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.338	0.388	13.77
05/29/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.344	0.54	44.34
06/10/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.16	0.18	11.76
06/22/90	ND	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.38	0.34	-11.11
07/04/90	0.092	0.11	17.82	ND	ND	N/A	ND	ND	N/A	0.48	0.49	2.06
07/16/90	0.11	0.13	16.67	ND	ND	N/A	ND	ND	N/A	0.793	0.704	-11.89
07/28/90	0.099	ND	N/A	ND	ND	N/A	ND	ND	N/A	0.344	0.33	-4.15
08/09/90	0.18	0.31	53.06	ND	ND	N/A	ND	ND	N/A	1.05	1.06	0.95
09/02/90	0.095	0.058	-48.37	ND	ND	N/A	ND	ND	N/A	0.347	0.342	-1.45
09/14/90	0.082	0.089	8.19	ND	ND	N/A	ND	ND	N/A	0.338	0.333	-1.49
09/26/90	0.12	0.11	-8.70	ND	ND	N/A	ND	ND	N/A	1.71	1.7	-0.59
Number of valid pairs:			13			0			0			37
Mean % Diff:			22.742			N/A			N/A			-5.780
Std of % Diff:			41.14			N/A			N/A			32.43
Lower 95 % Conf. Limit:			-57.89			N/A			N/A			-69.34
Upper 95 % Conf. Limit:			103.38			N/A			N/A			57.78

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected; GT - Greater than upper certified reporting limit
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

Ebasco Services Incorporated
Listing of VOC concentrations of collocated pairs.

IRA-F Program
Concentrations are in micrograms per standard cubic meter.

Sample Date	Trichloroethene			Meta- & Para-Xylenes			Total Xylenes		
	FC2	FC2D	% Diff	FC2	FC2D	% Diff	FC2	FC2D	% Diff
05/10/89	0.107	0.145	30.16	1.83	3.2	54.47	2.539	4.27	50.84
06/03/89	ND	ND	N/A	0.236	ND	N/A	0.339	0.121	-94.78
06/15/89	ND	ND	N/A	1.25	1	-22.22	1.752	1.384	-23.47
06/27/89	0.121	ND	N/A	1.54	1.83	17.21	2.179	2.585	17.04
07/09/89	ND	ND	N/A	1.37	1.02	-29.29	1.79	1.375	-26.22
07/21/89	ND	ND	N/A	0.576	0.663	14.04	0.798	0.936	15.92
08/14/89	ND	ND	N/A	2.64	2.65	0.38	4.01	4.1	2.22
08/26/89	ND	ND	N/A	1.73	1.47	-16.25	2.329	1.972	-16.60
09/07/89	ND	ND	N/A	0.438	0.553	23.21	0.594	0.752	23.48
09/19/89	ND	0.0569	N/A	1.23	1.34	8.56	1.607	1.751	8.58
10/01/89	ND	0.059	N/A	1.76	1.31	-29.32	2.625	1.688	-43.45
10/13/89	0.069	0.074	6.99	2.56	2.56	0.00	3.7	3.72	0.54
10/25/89	0.23	0.26	12.24	GT	GT	N/A	2.81	2.87	2.11
11/06/89	0.15	0.16	6.45	2.04	2.84	32.79	3.42	4.52	27.71
11/18/89	0.061	ND	N/A	2.55	2.05	-21.74	3.79	3.019	-22.65
11/30/89	0.2	0.18	-10.53	4.59	3.74	-20.41	7.17	6.01	-17.60
12/12/89	0.13	0.088	-38.53	0.24	ND	N/A	0.301	ND	N/A
12/24/89	0.059	0.063	6.56	3.1	0.15	-181.54	4.51	0.195	-183.42
01/05/90	0.12	0.11	-8.70	0.29	2.07	150.85	0.372	2.892	154.41
01/17/90	0.15	ND	N/A	3.75	ND	N/A	5.44	0.044	-196.79
01/29/90	ND	ND	N/A	0.767	0.722	-6.04	1.097	1.022	-7.08
02/10/90	ND	ND	N/A	0.4	0.43	7.23	0.56	0.6	6.90
02/22/90	0.1	0.088	-12.77	2.59	2.39	-8.03	3.8	3.51	-7.93
03/06/90	ND	ND	N/A	0.22	0.19	-14.63	0.306	0.273	-11.40
03/12/90	ND	ND	N/A	1.38	0.461	-99.84	1.87	0.922	-67.91
04/11/90	ND	ND	N/A	0.24	ND	N/A	0.34	0.051	-147.83
04/23/90	ND	ND	N/A	1.06	1.59	40.00	1.43	2.387	50.14
05/17/90	ND	ND	N/A	0.676	1.16	52.72	0.956	1.548	47.28
05/29/90	ND	ND	N/A	0.344	0.389	12.28	0.544	0.569	4.49
06/10/90	ND	ND	N/A	0.344	0.424	20.83	0.534	0.634	17.12
06/22/90	ND	ND	N/A	0.816	0.704	-14.74	1.146	1.004	-13.21
07/04/90	ND	ND	N/A	0.712	0.735	3.18	1.042	1.095	4.96
07/16/90	ND	ND	N/A	1.08	1.41	26.51	1.854	2.114	13.10
07/28/90	ND	ND	N/A	1.03	0.99	-3.96	1.374	1.32	-4.01
08/09/90	ND	ND	N/A	6.97	7.04	1.00	9.06	9.5	4.74
09/02/90	ND	ND	N/A	0.694	0.2	-110.51	0.874	0.234	-115.52
09/14/90	ND	ND	N/A	0.23	0.667	97.44	0.274	0.817	99.54
09/26/90	ND	ND	N/A	3.42	2.72	-22.80	4.45	3.74	-17.34

	Trichloroethene	Meta- & Para-Xylenes	Total Xylenes
Number of valid pairs:	9	33	37
Mean % Diff:	-0.902	-1.171	-7.172
Std of % Diff:	19.43	56.64	62.09
Lower 95 % Conf. Limit:	-38.98	-112.18	-128.87
Upper 95 % Conf. Limit:	37.18	109.84	114.52

Note: % Diff = Percentage difference between the collocated site concentration and the primary site concentration.
% Diff = 100 * (FC2D - FC2)/[(FC2 + FC2D)/2]
ND - Not Detected; GT - Greater than upper certified reporting limit
N/A - Not Applicable
Valid pair - Both FC2 and FC2D report detectable, measurable concentrations.
Std - Sample Standard Deviation
Conf. Limit - Confidence Limit (At 95 %, the limits are [1.96*Std] below and above the mean % Diff).

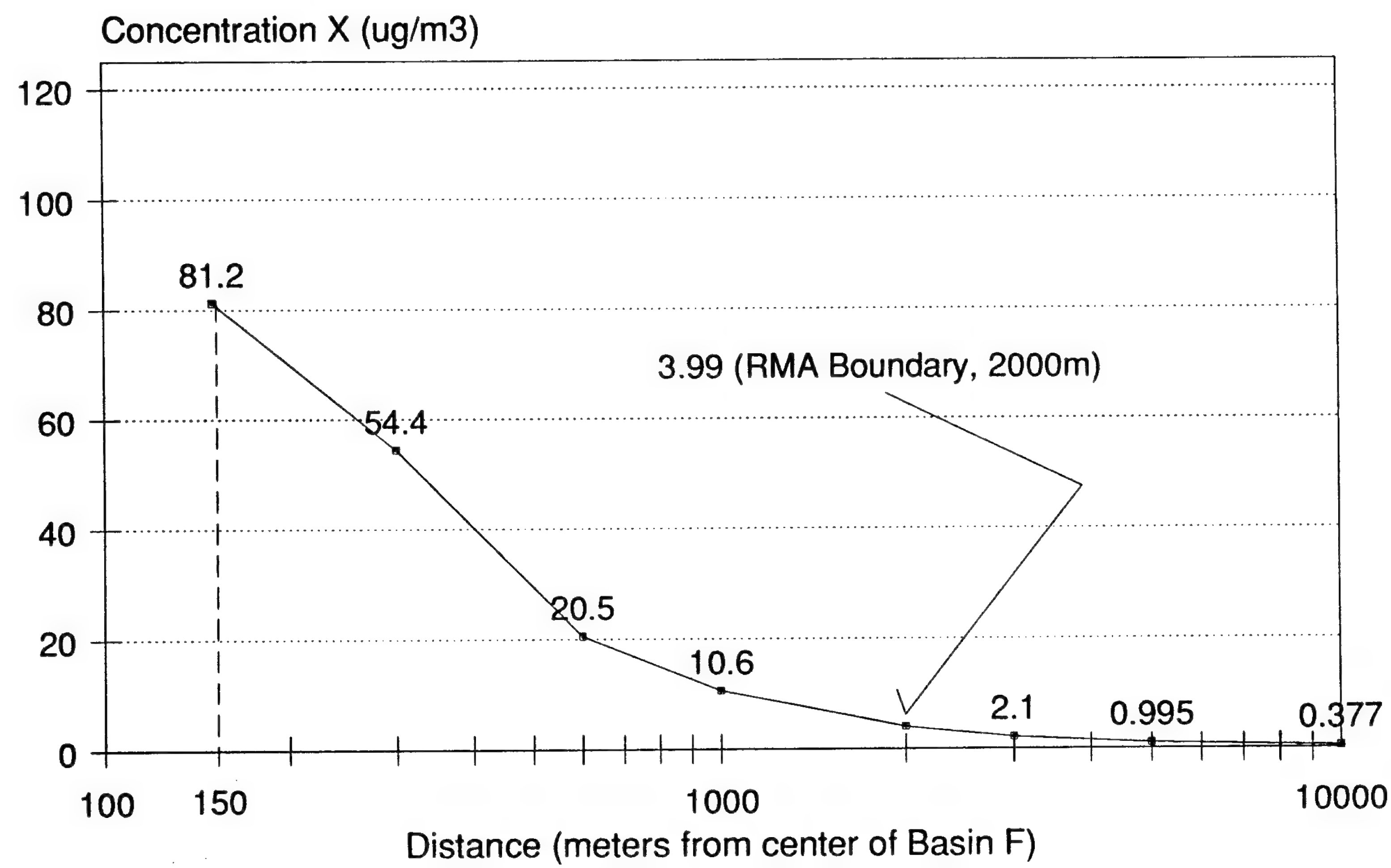
Appendix G

Relative 24-hour Worst Case and Annual Average

Concentrations by Radial Sector for Hypothetical Basin F Source

RMA NORTH RADIAL

FY89-90 Scaled Wrst Cs 24Hr Concntration



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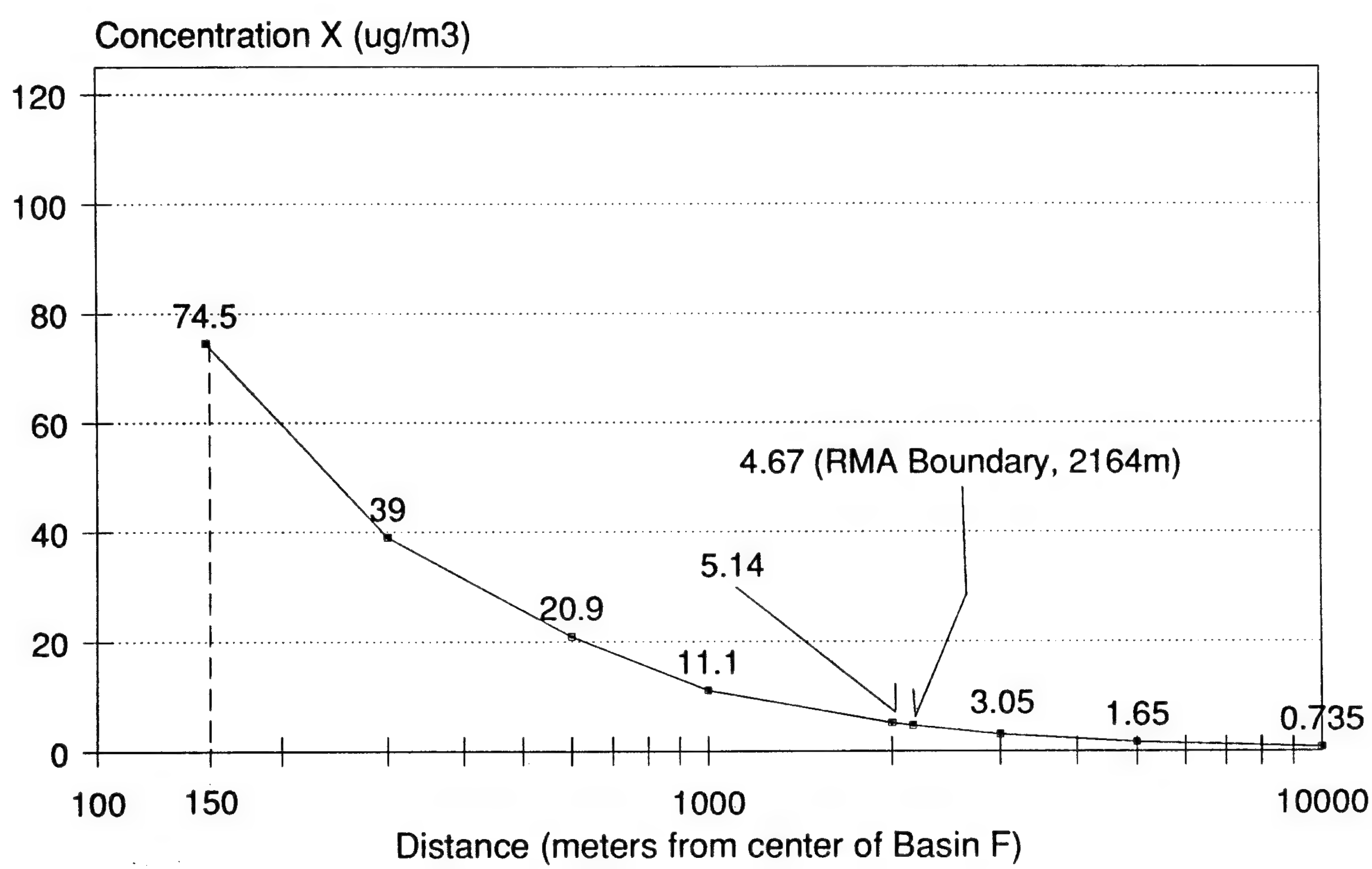

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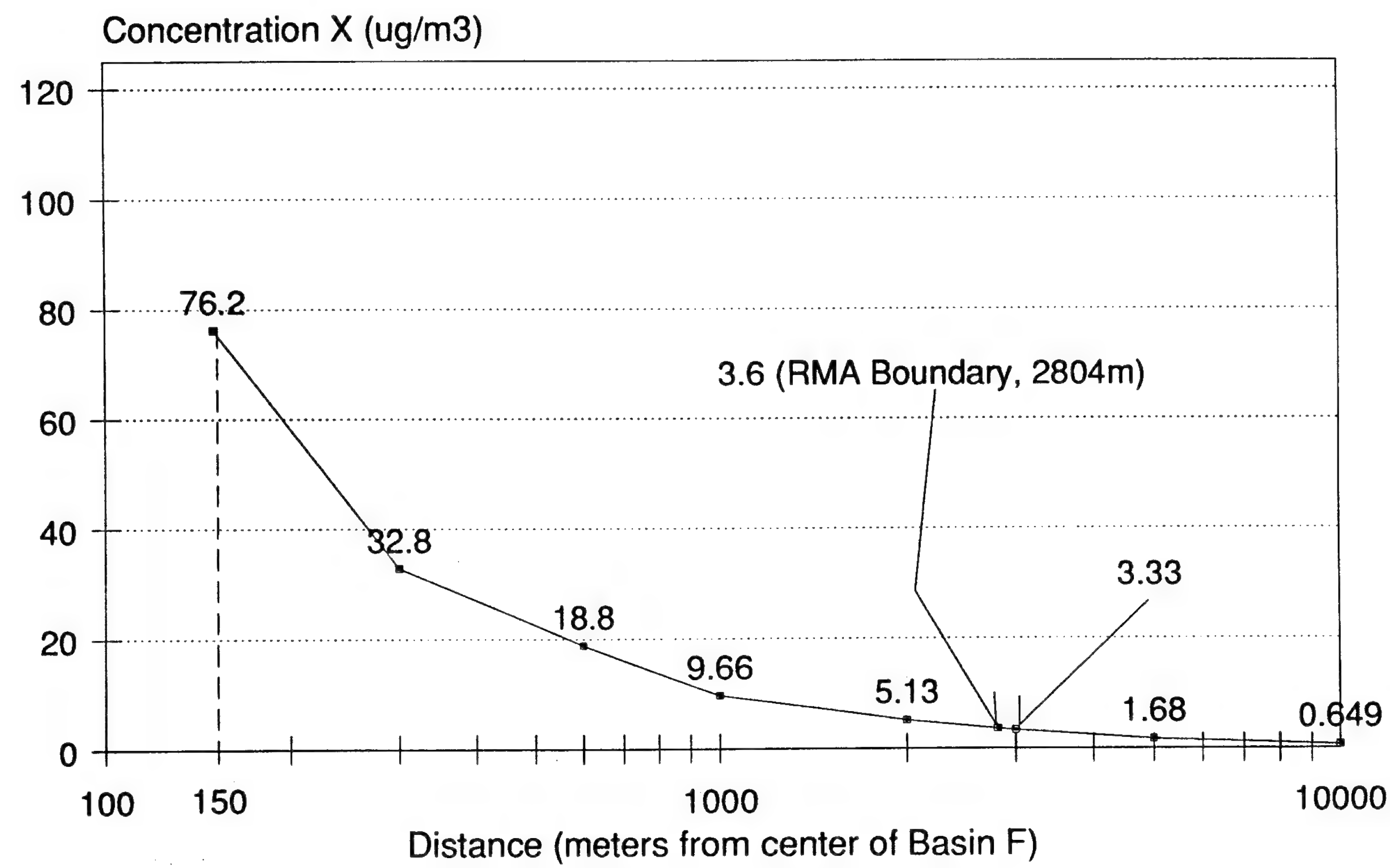

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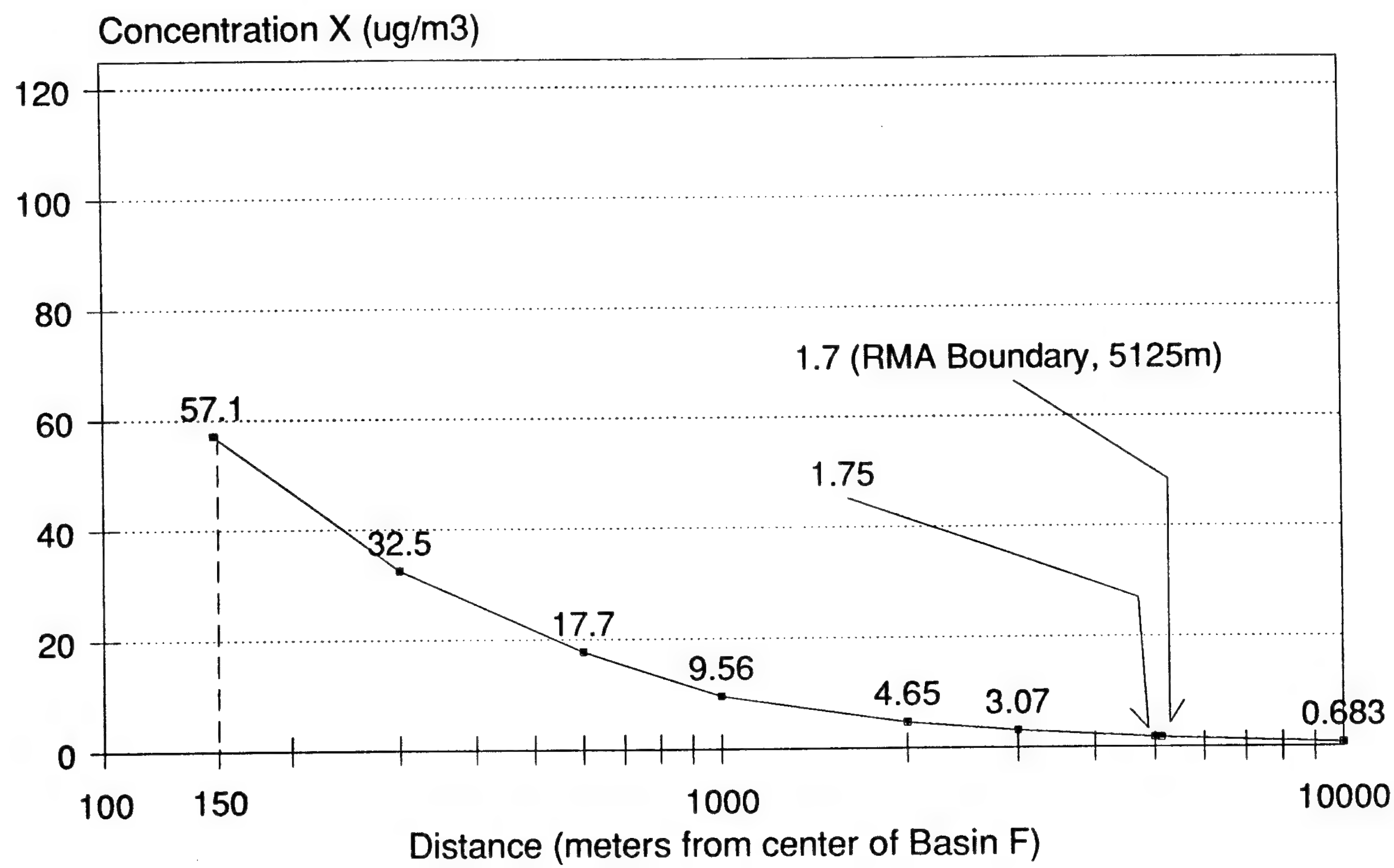

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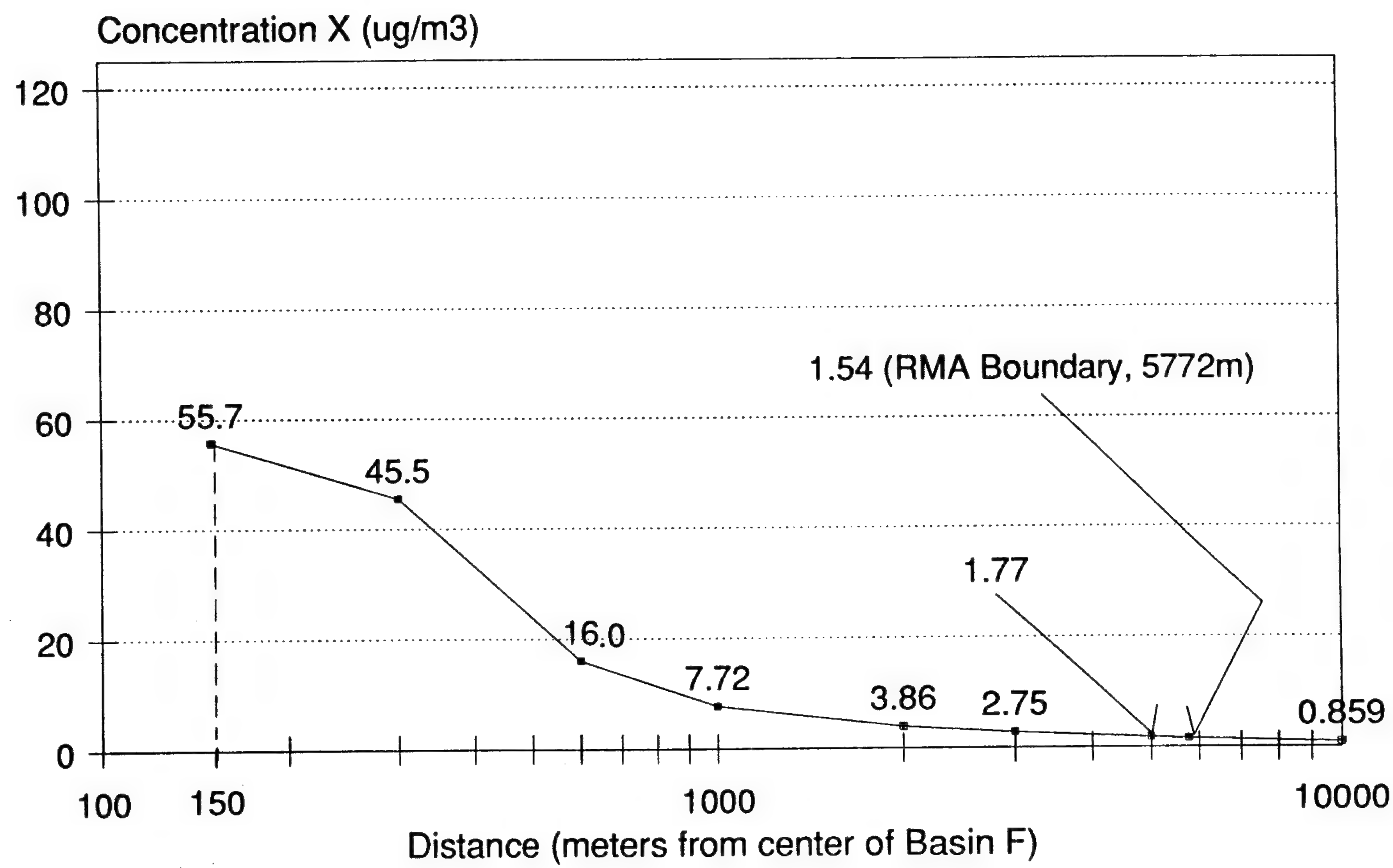

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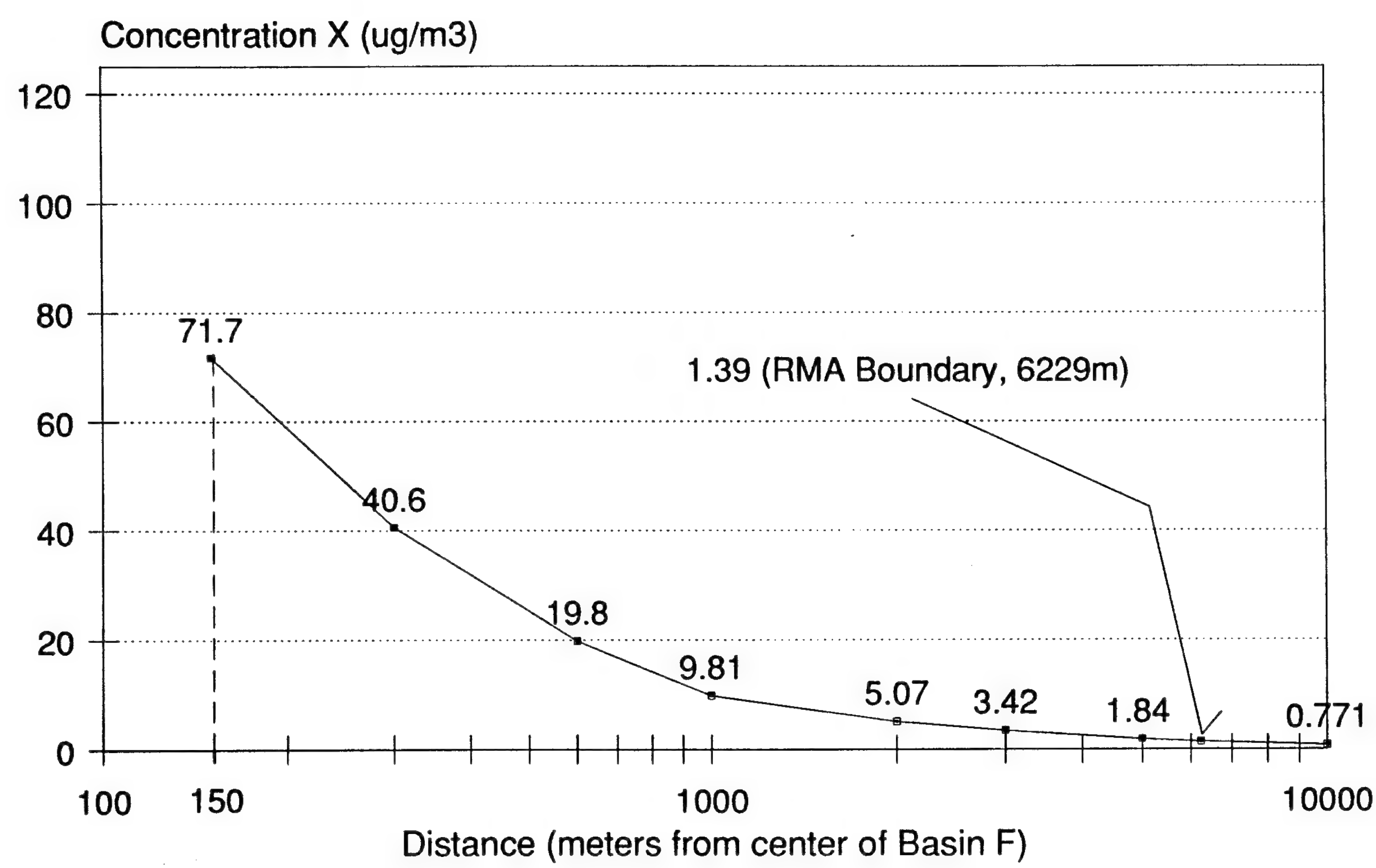

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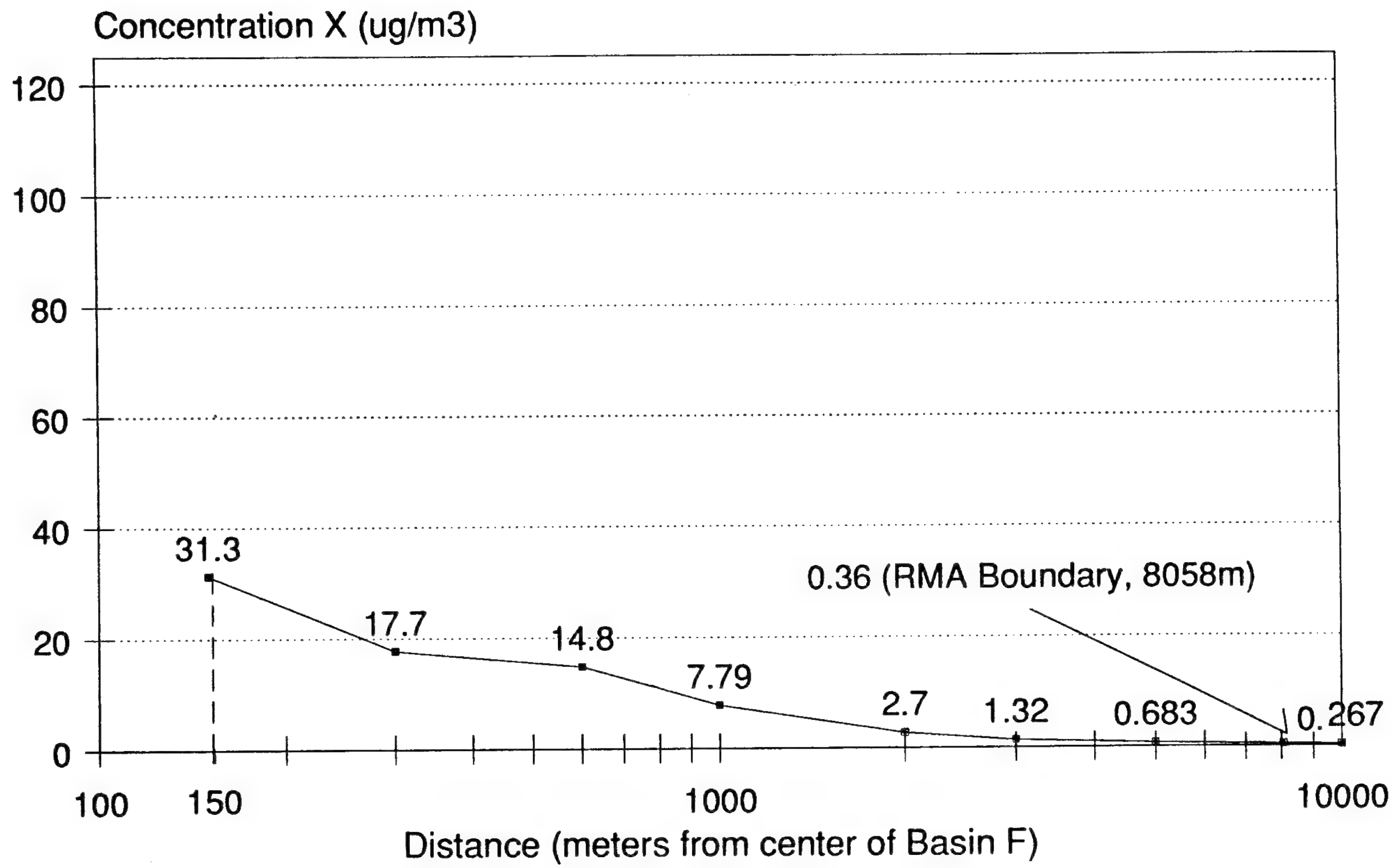

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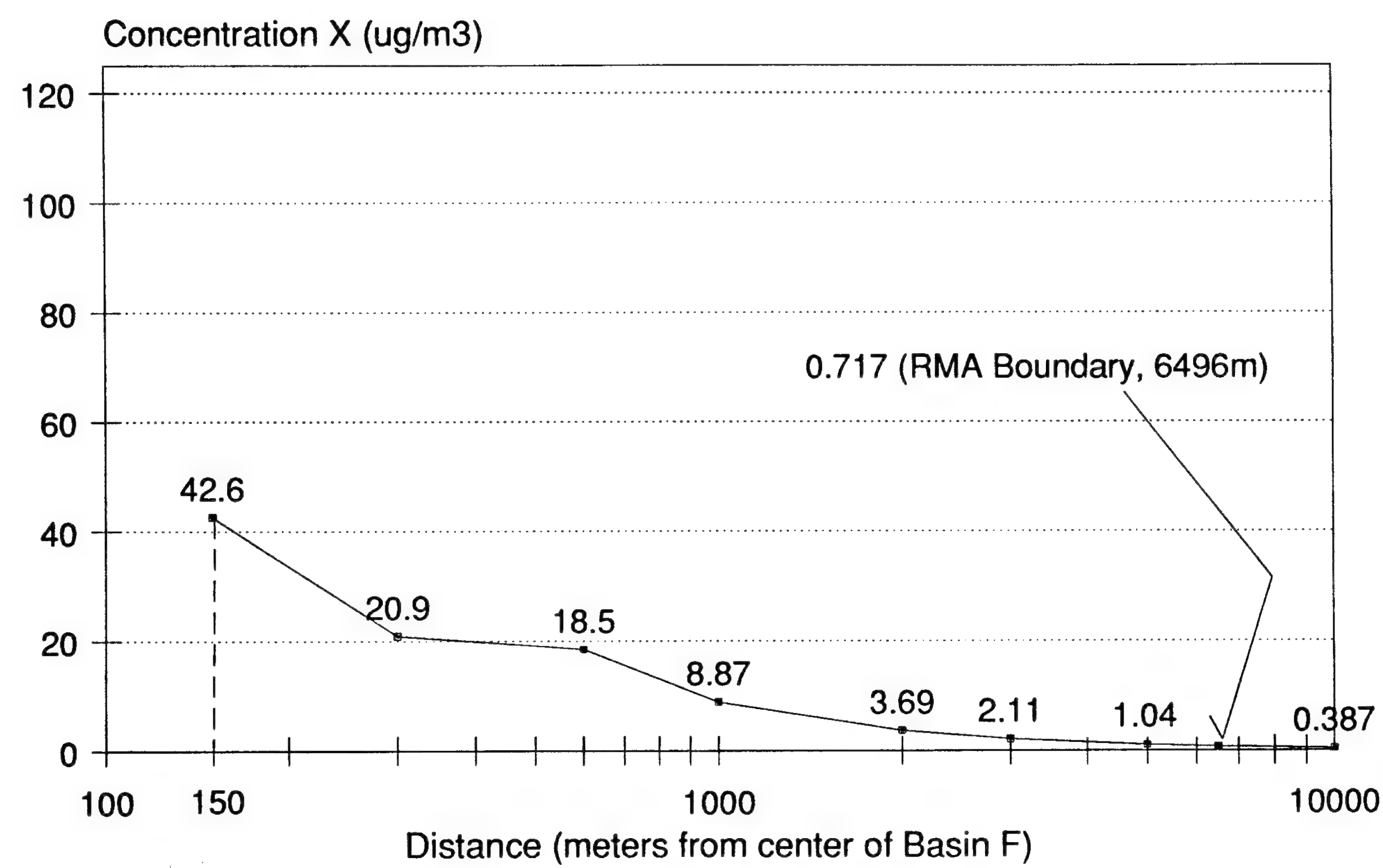

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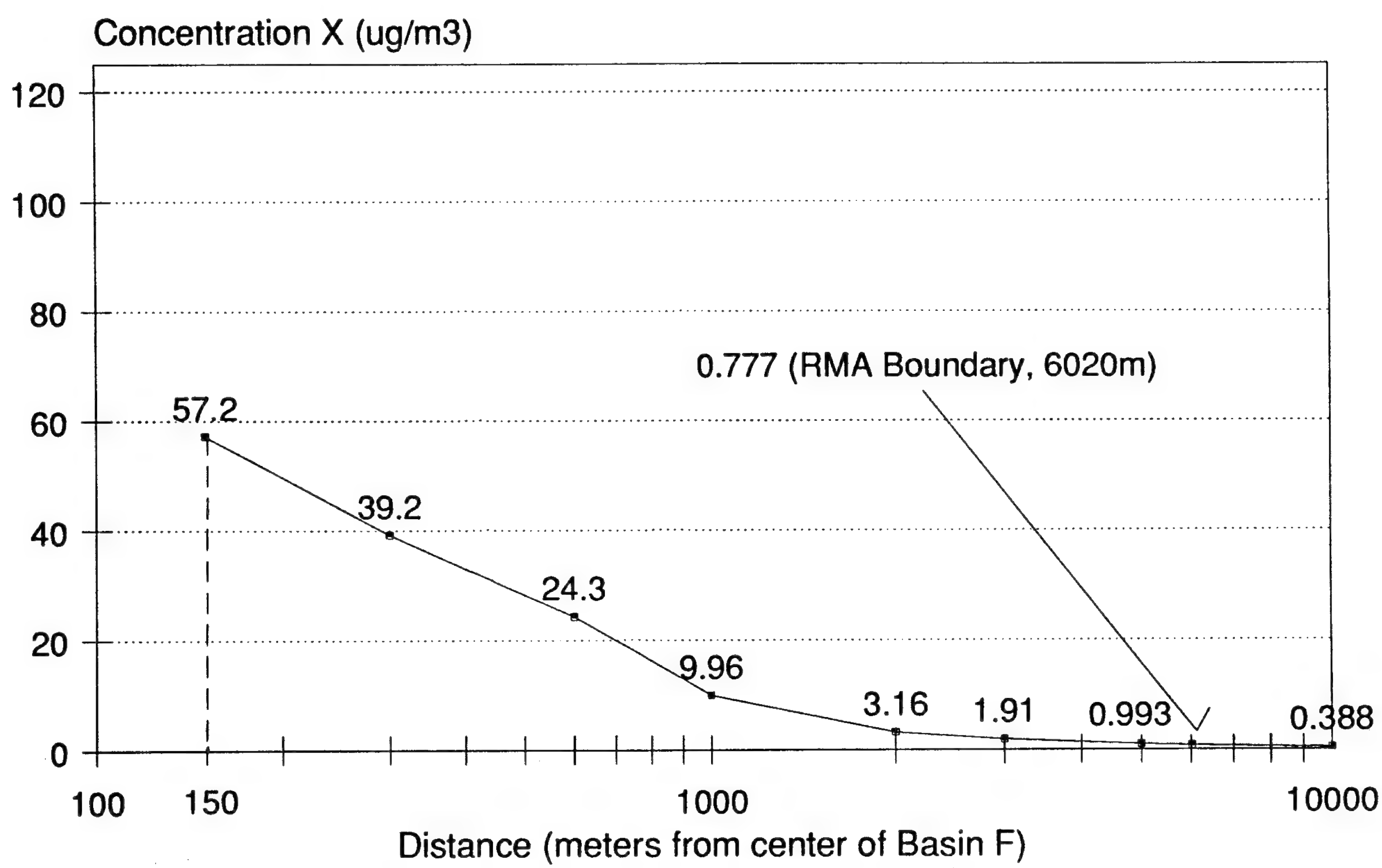

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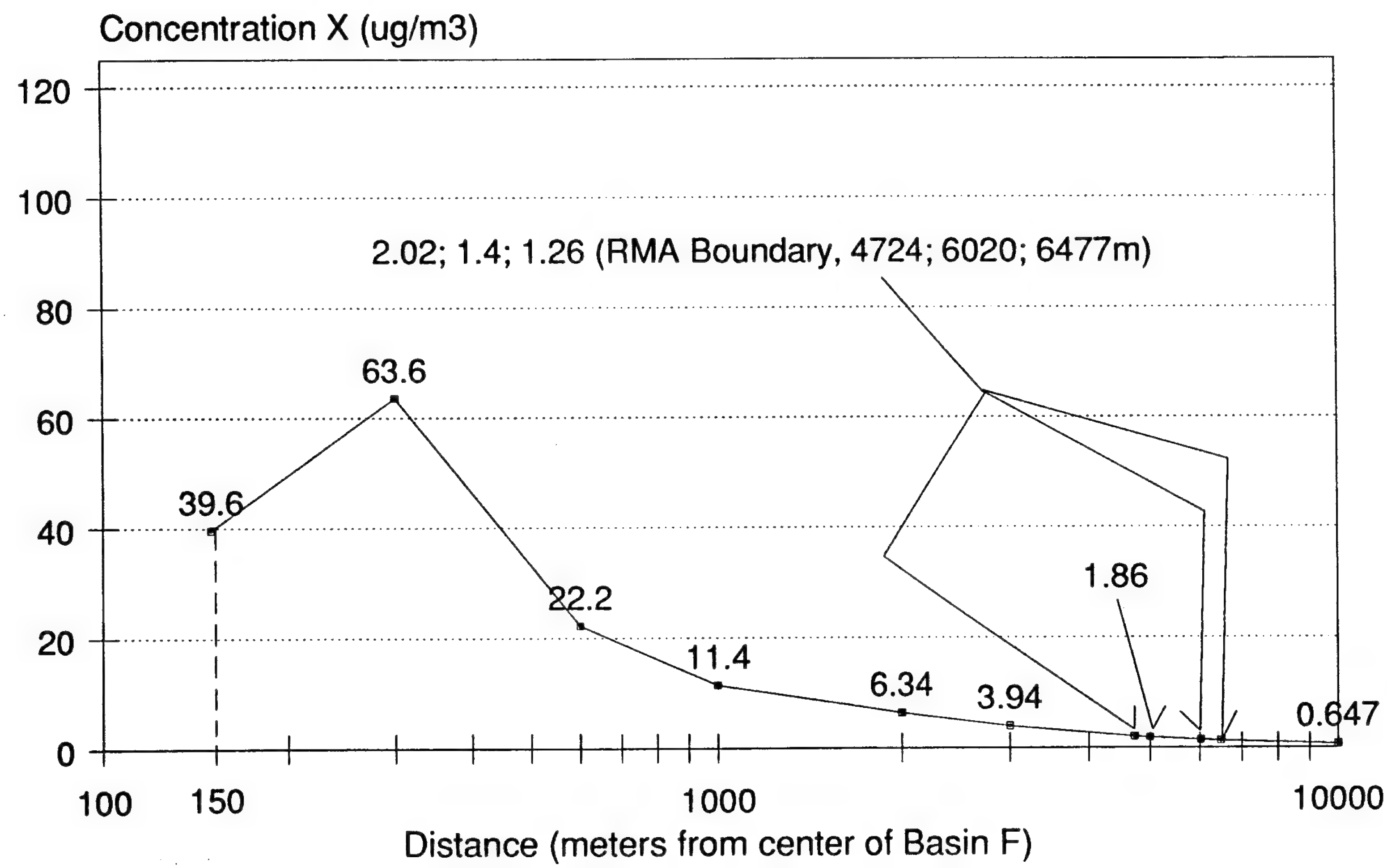

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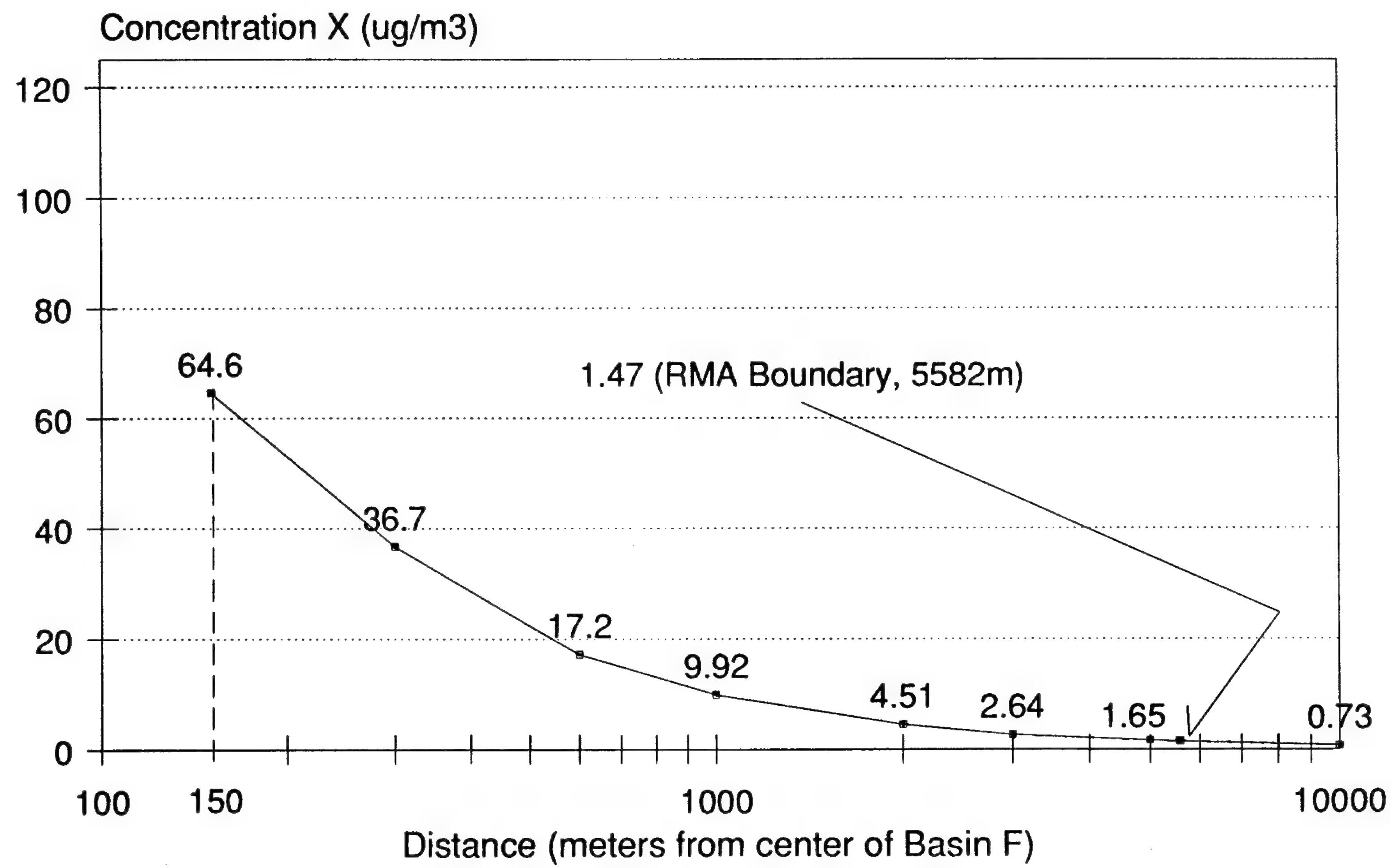

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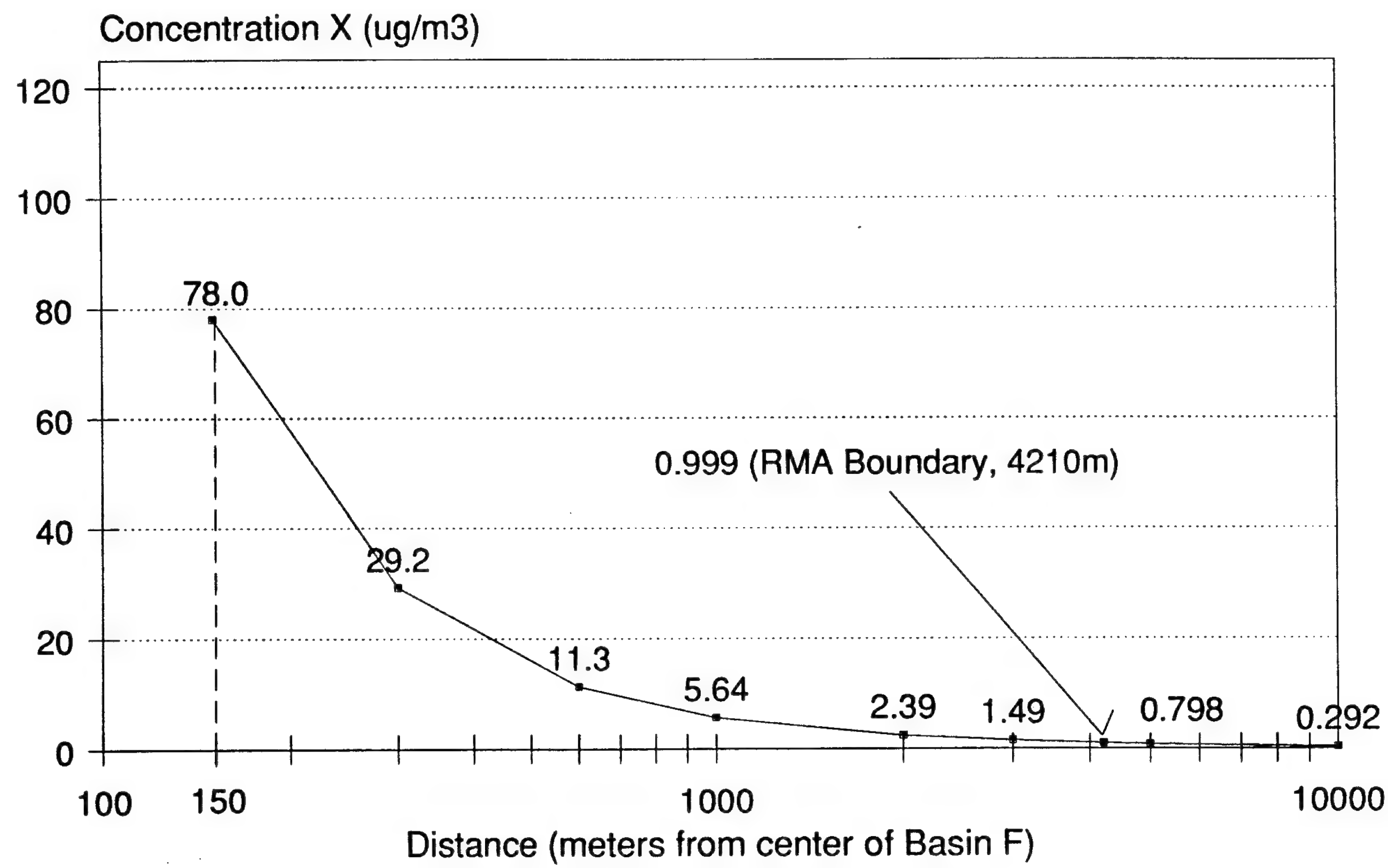

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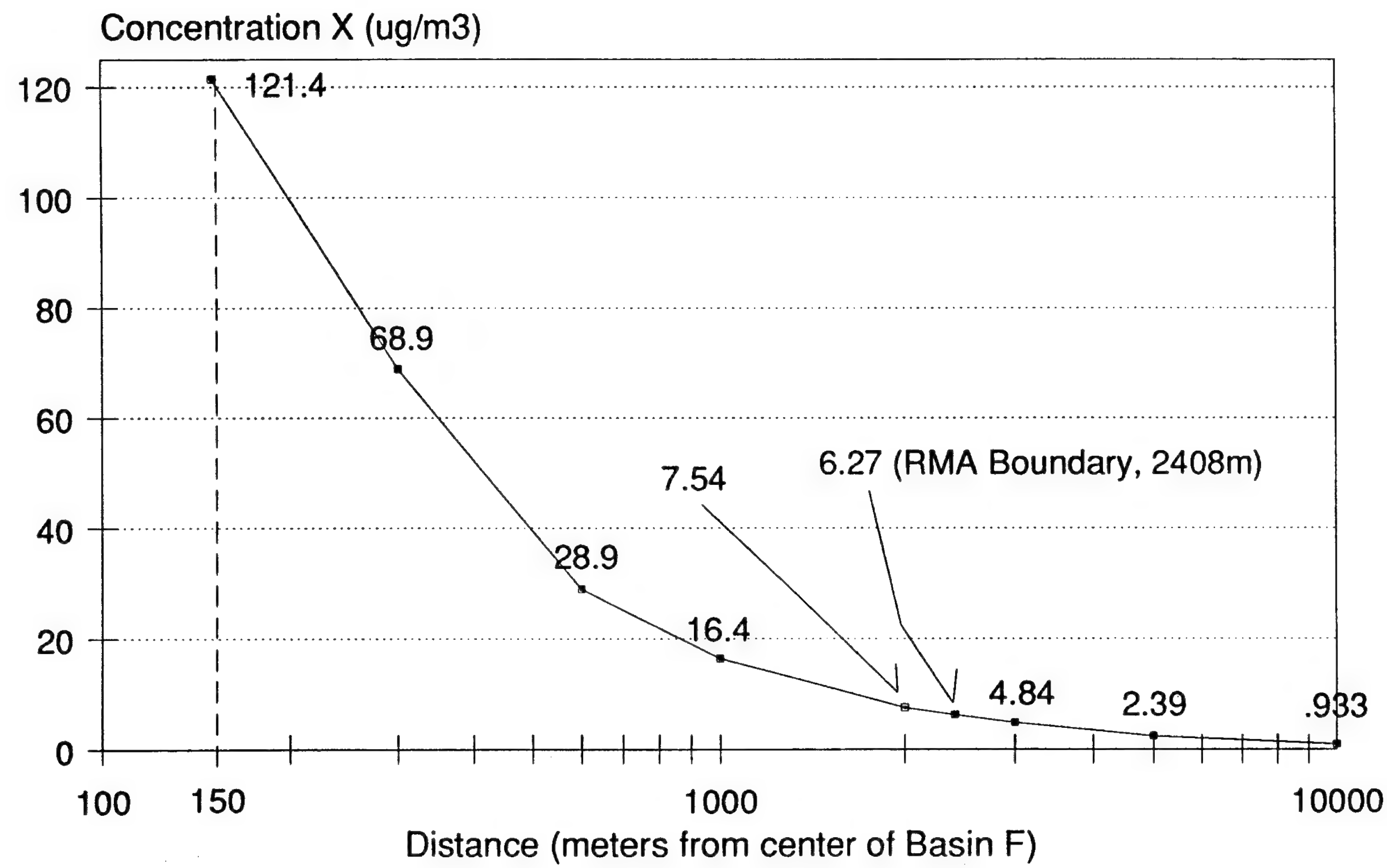
FY89-90 Scaled Wrst Cs 24Hr Concntration



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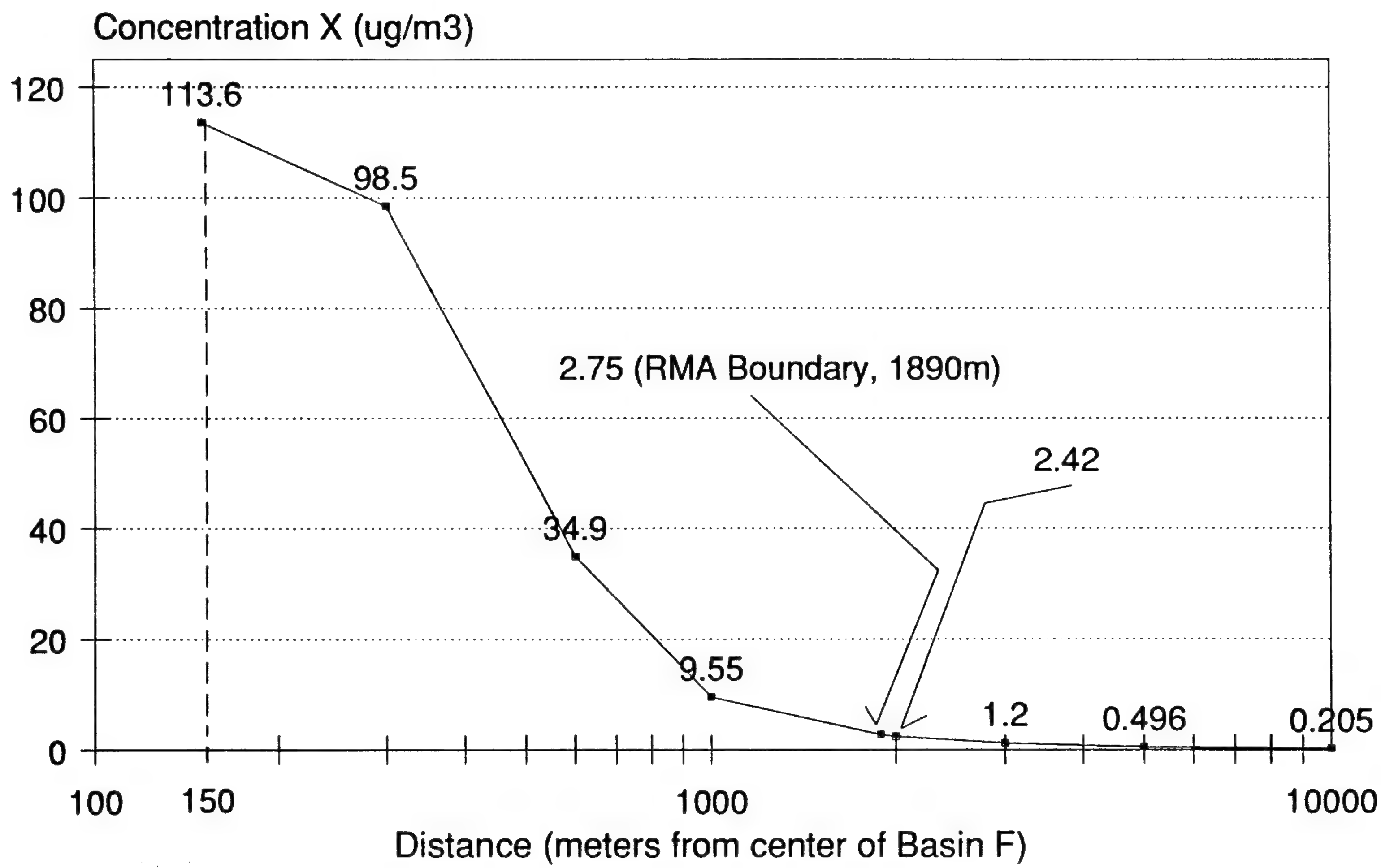
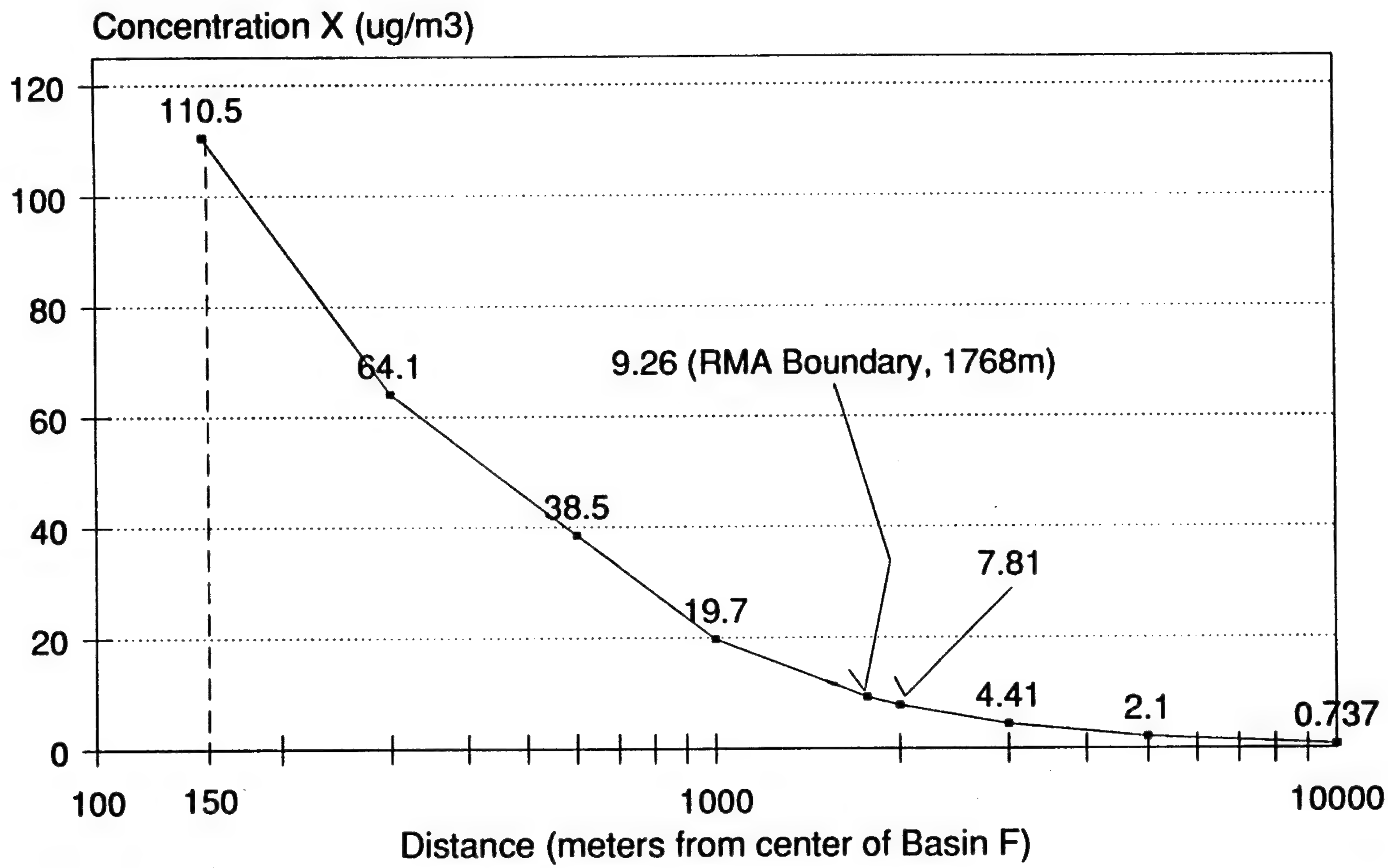


RMA NORTHWEST RADIAL *

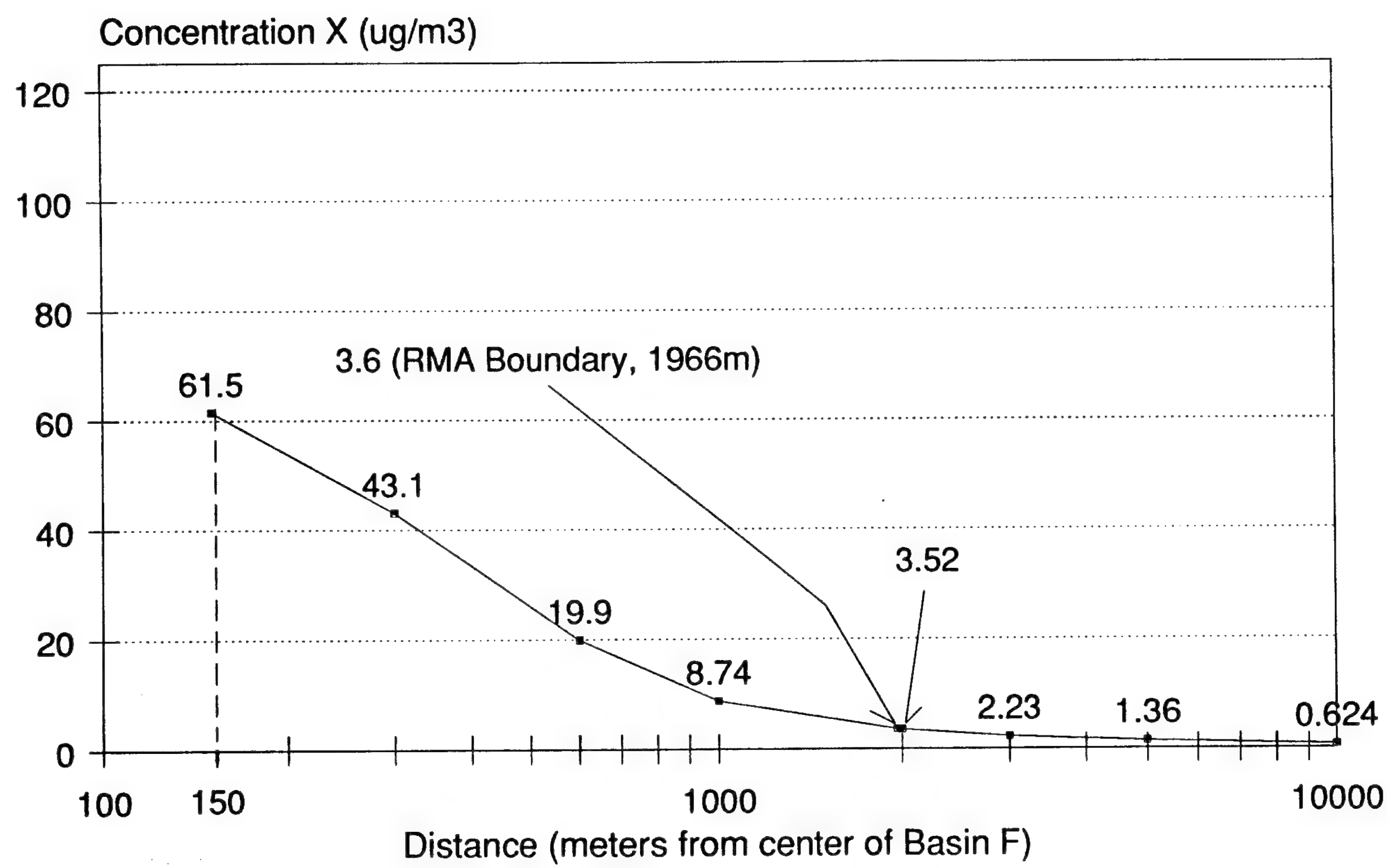
FY89-90 Scaled Wrst Cs 24Hr Concntration



* (worst case radial)

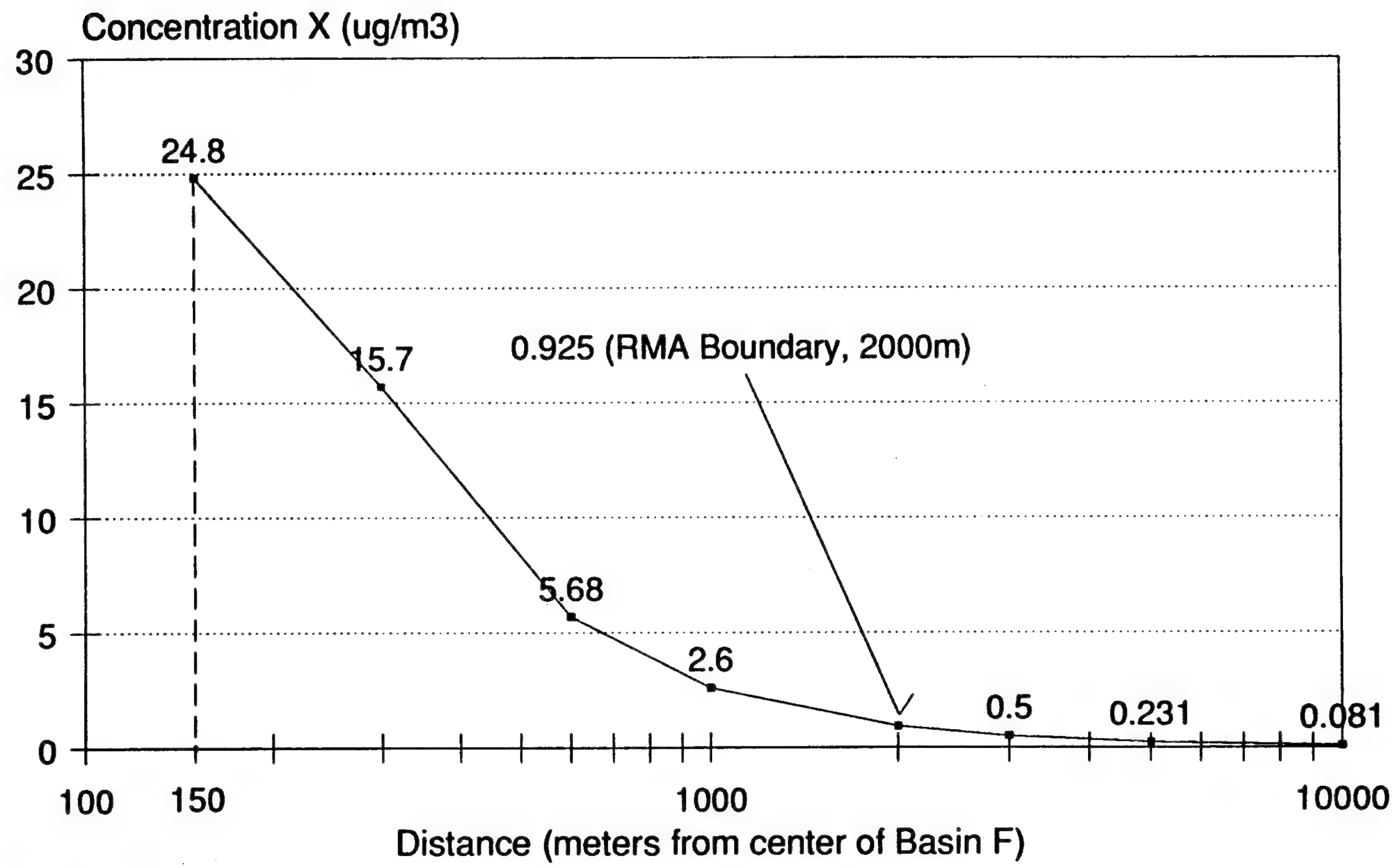
RMA NORTH-NORTHWEST RADIAL

FY89-90 Scaled Wrst Cs 24Hr Concntration



RMA NORTH RADIAL *

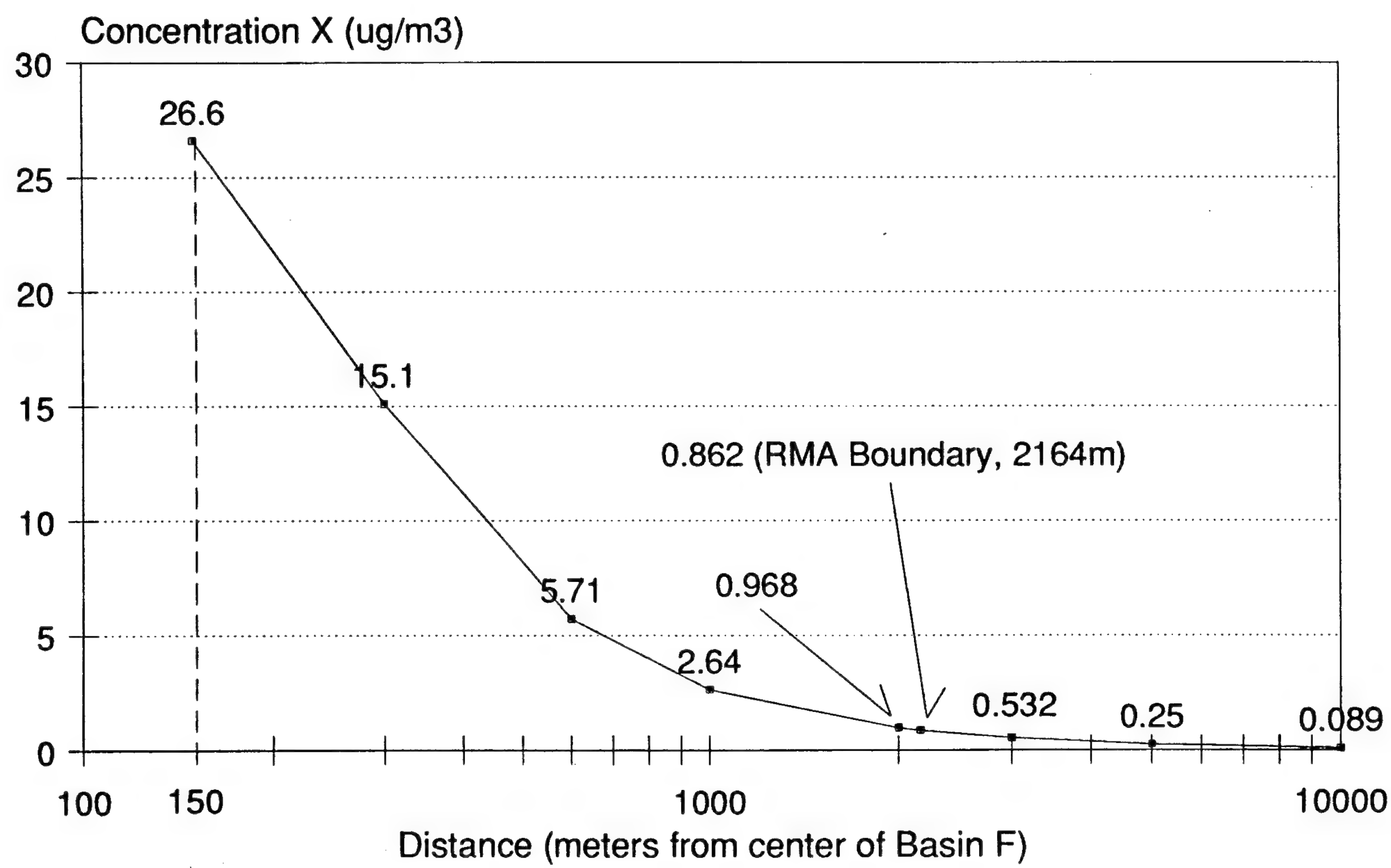
FY89-90 Scaled Annual Avg Concentration



* (worst case radial)

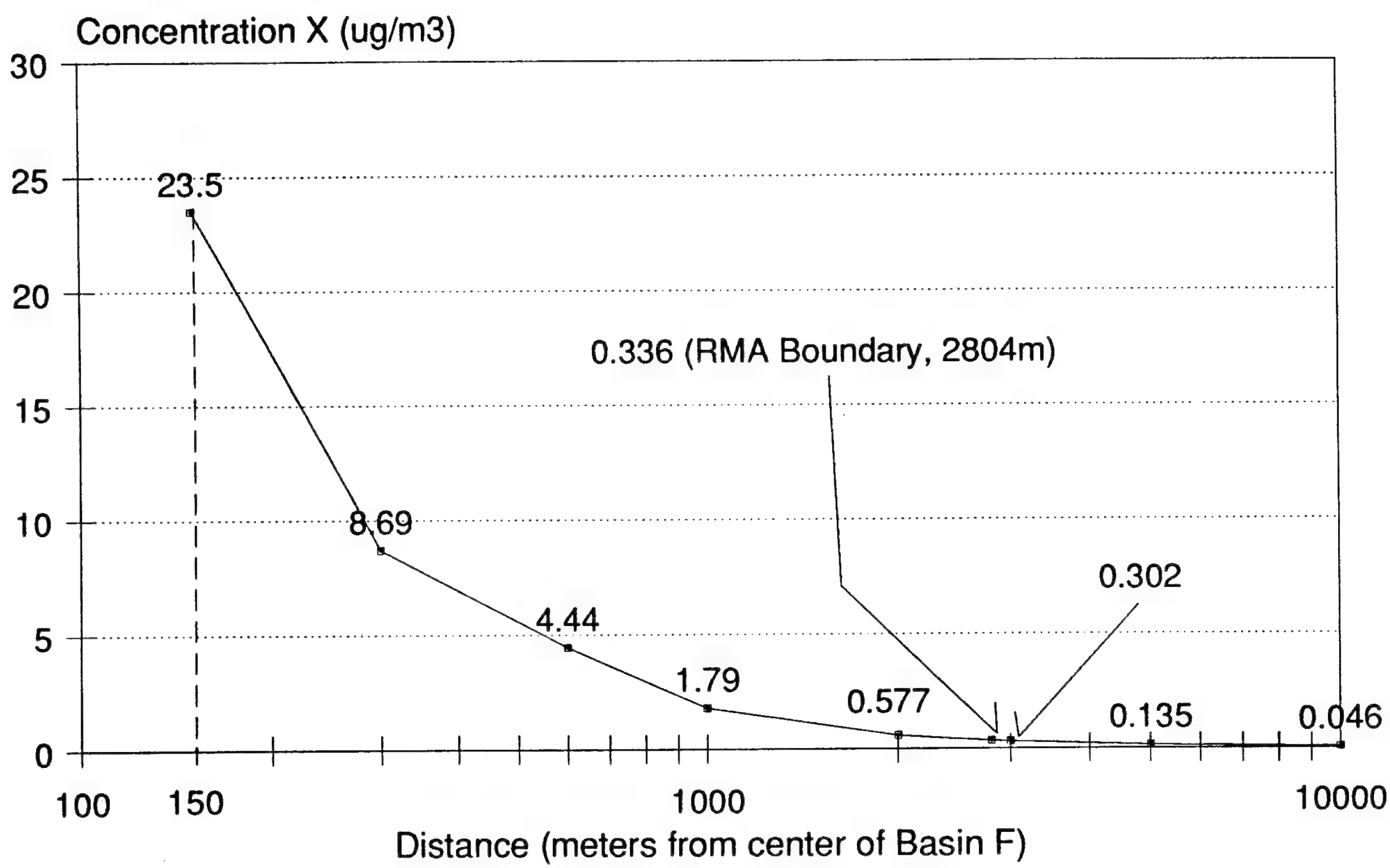
RMA NORTH-NORTHEAST RADIAL

FY89-90 Scaled Annual Avg Concentration



RMA NORTHEAST RADIAL

FY89-90 Scaled Annual Avg Concentration



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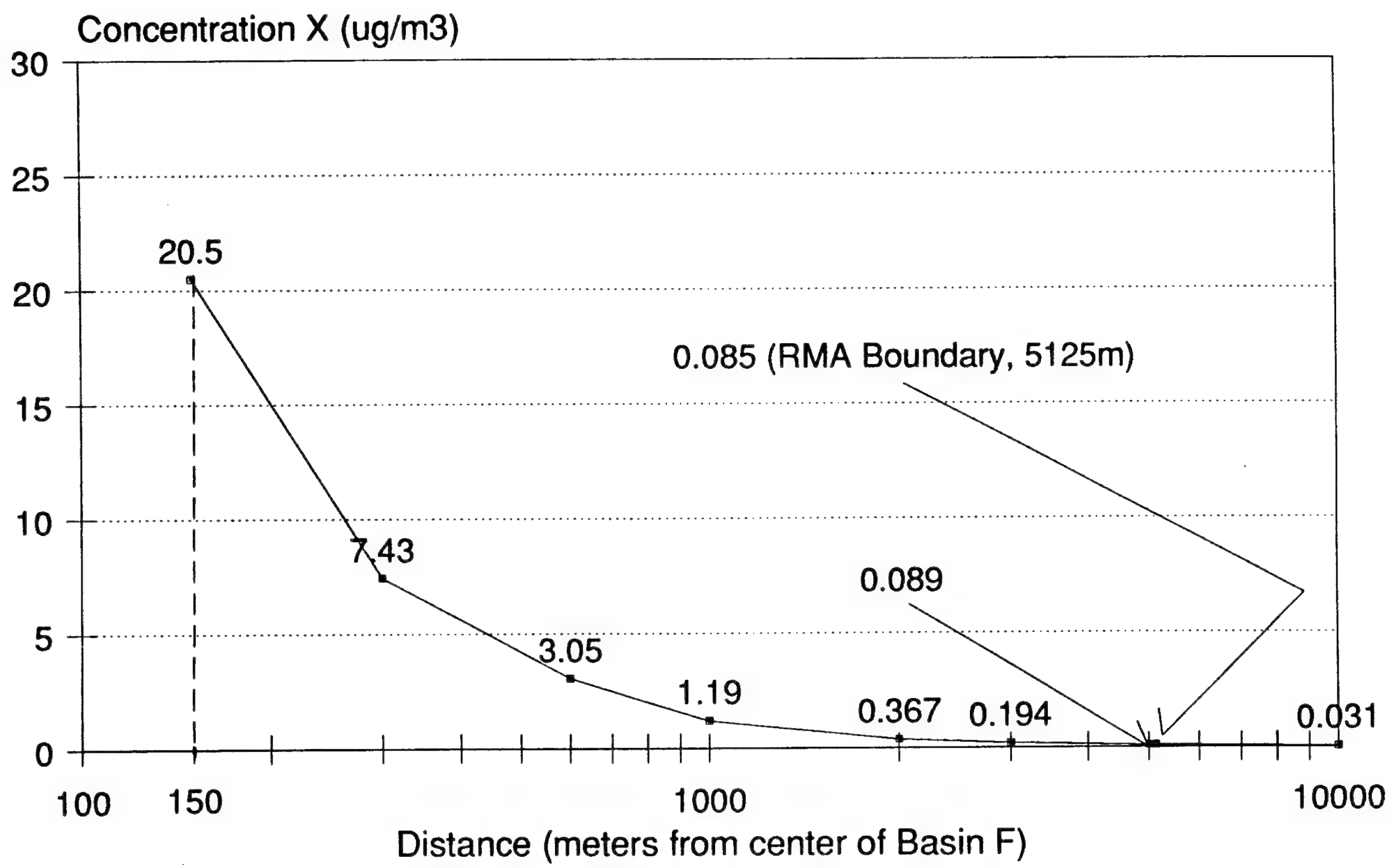
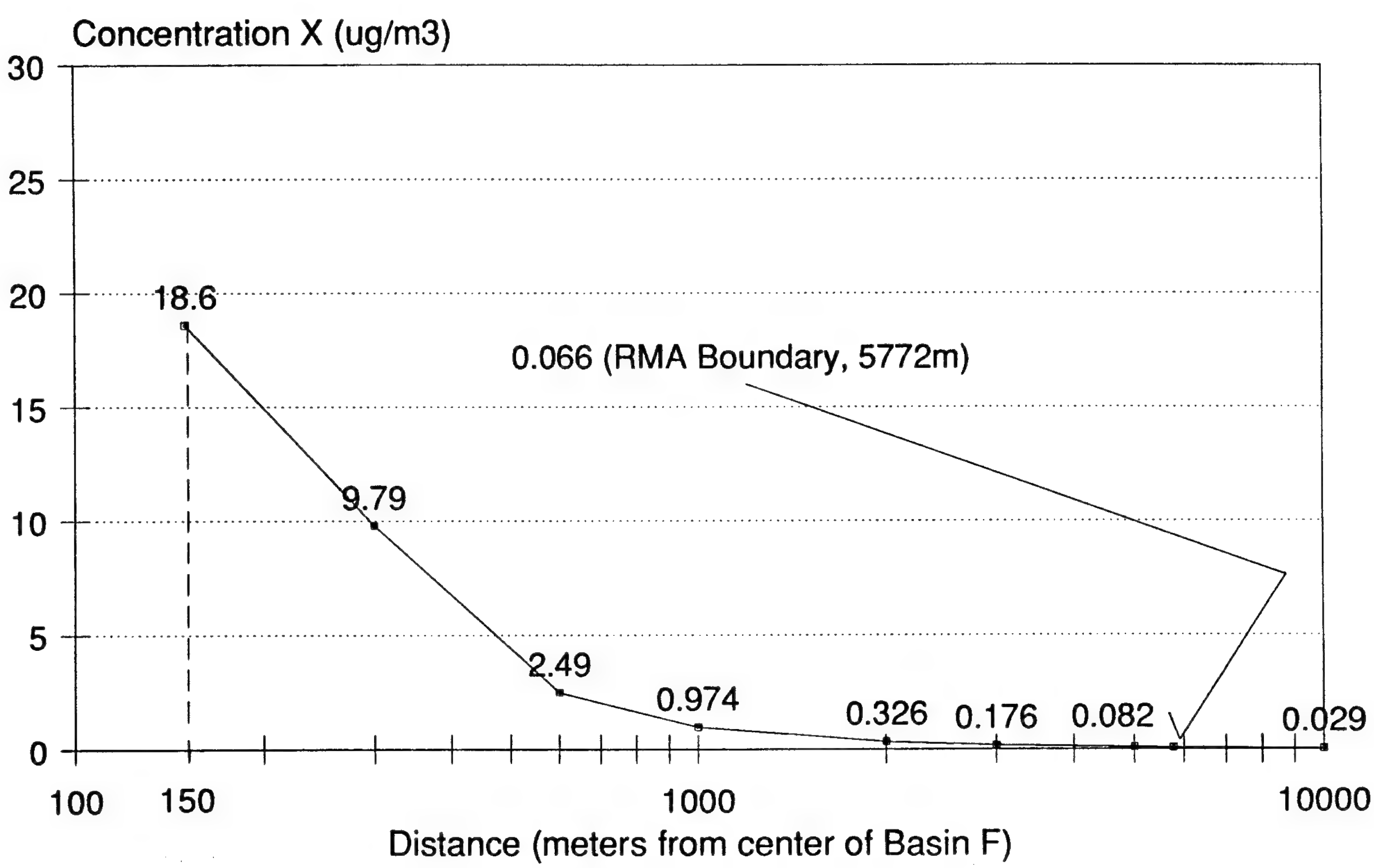
FY89-90 Scaled Annual Avg Concentration



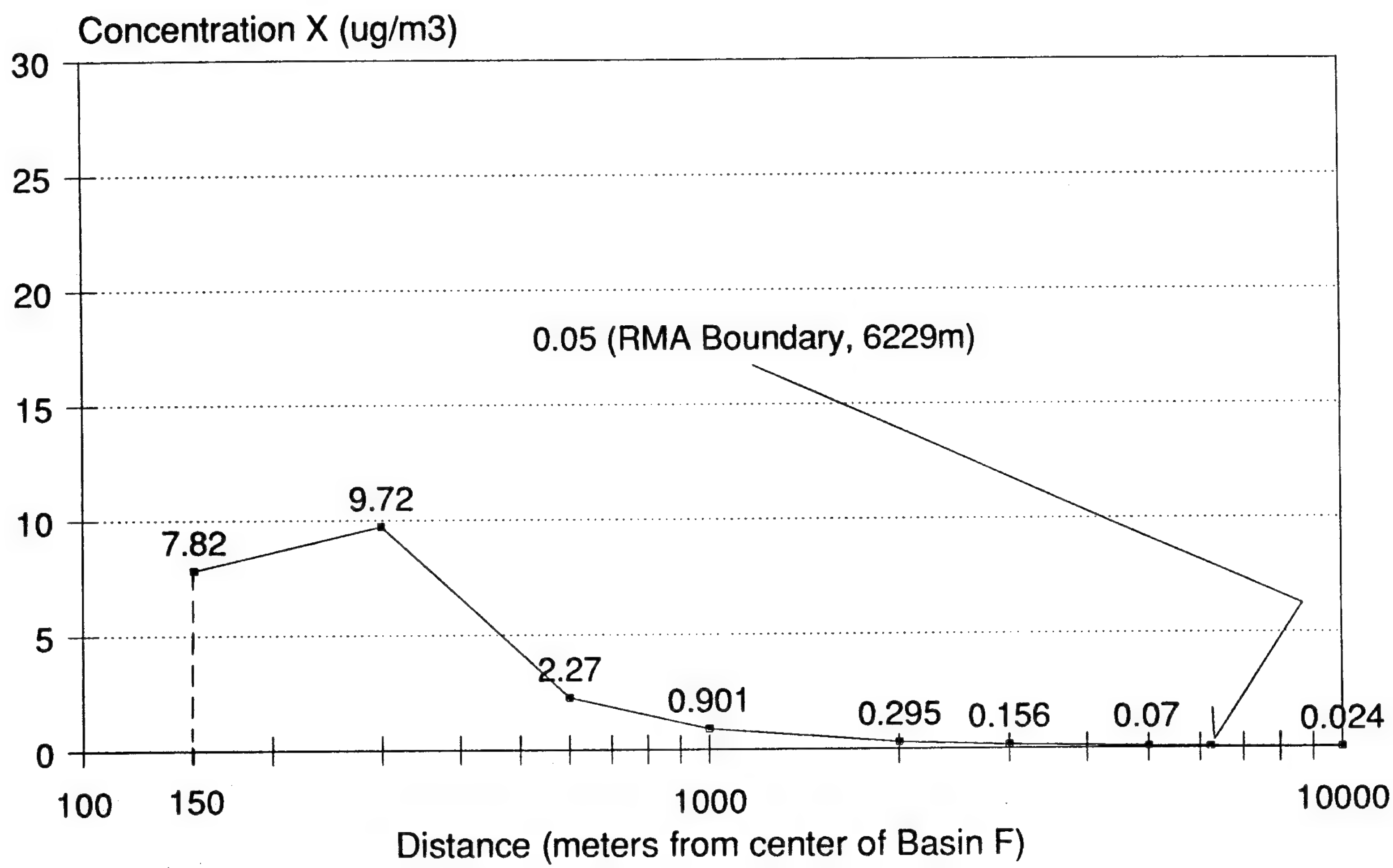
RMA EAST RADIAL

FY89-90 Scaled Annual Avg Concentration



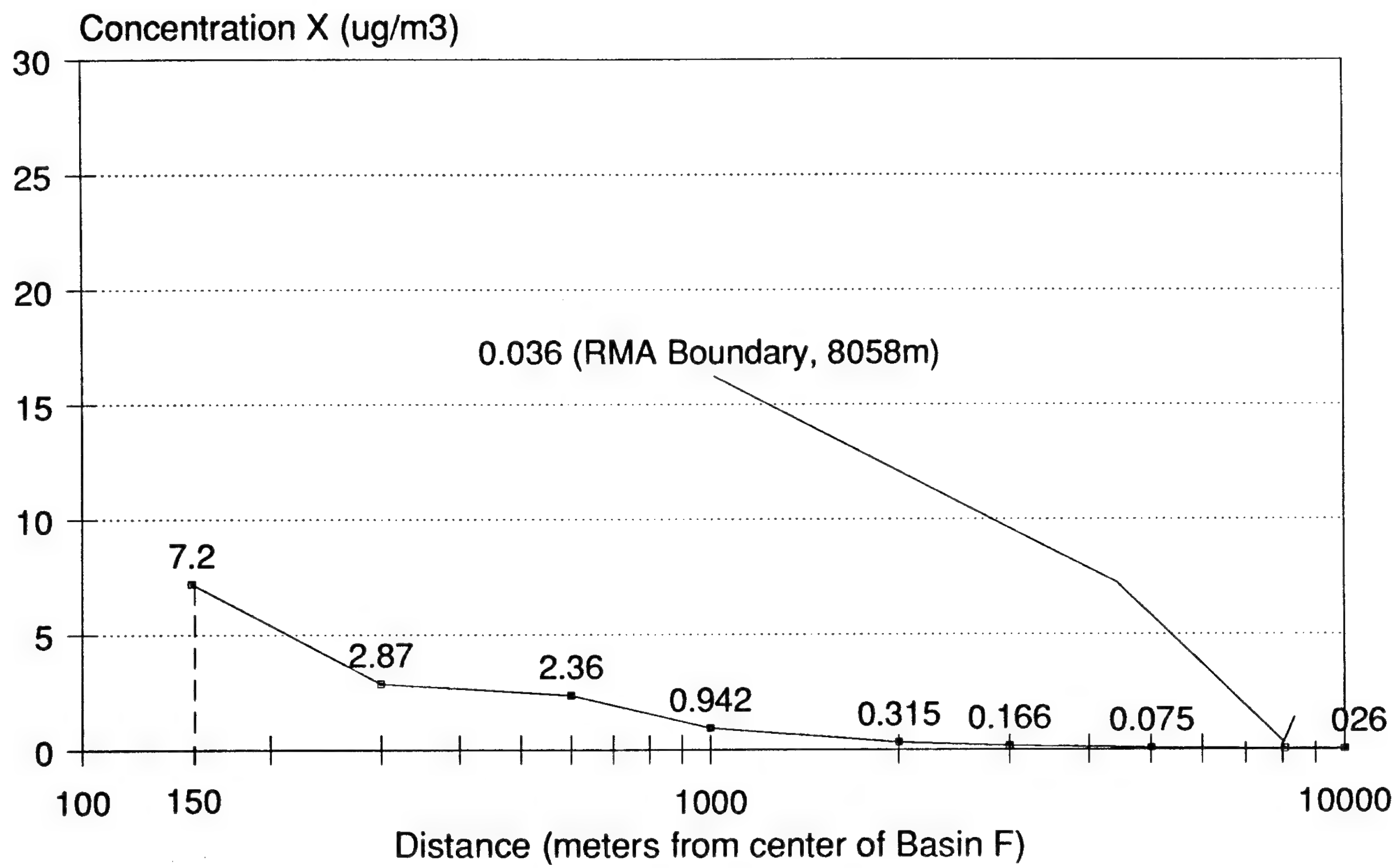
RMA EAST-SOUTHEAST RADIAL

FY89-90 Scaled Annual Avg Concentration



RMA SOUTHEAST RADIAL

FY89-90 Scaled Annual Avg Concentration



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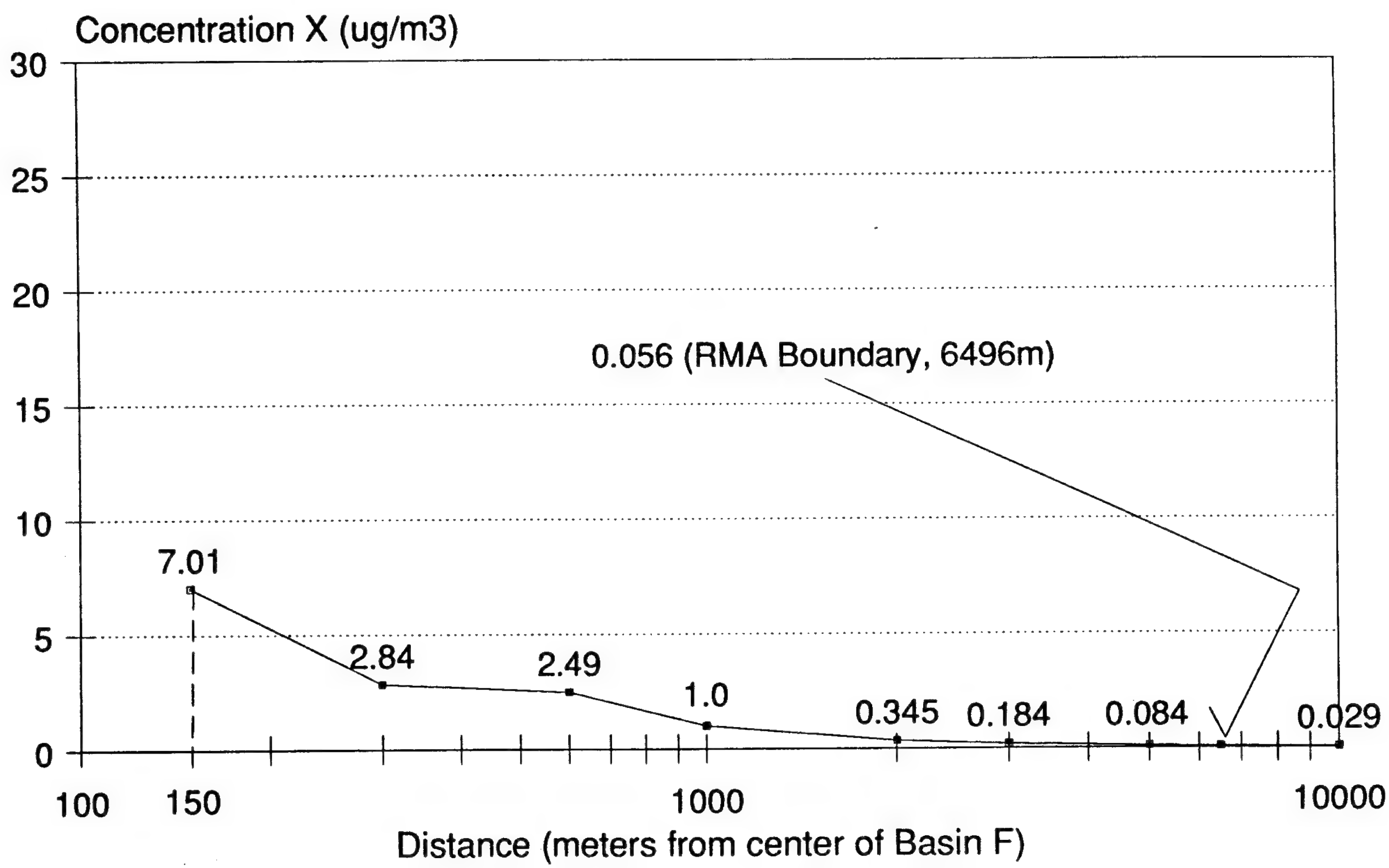
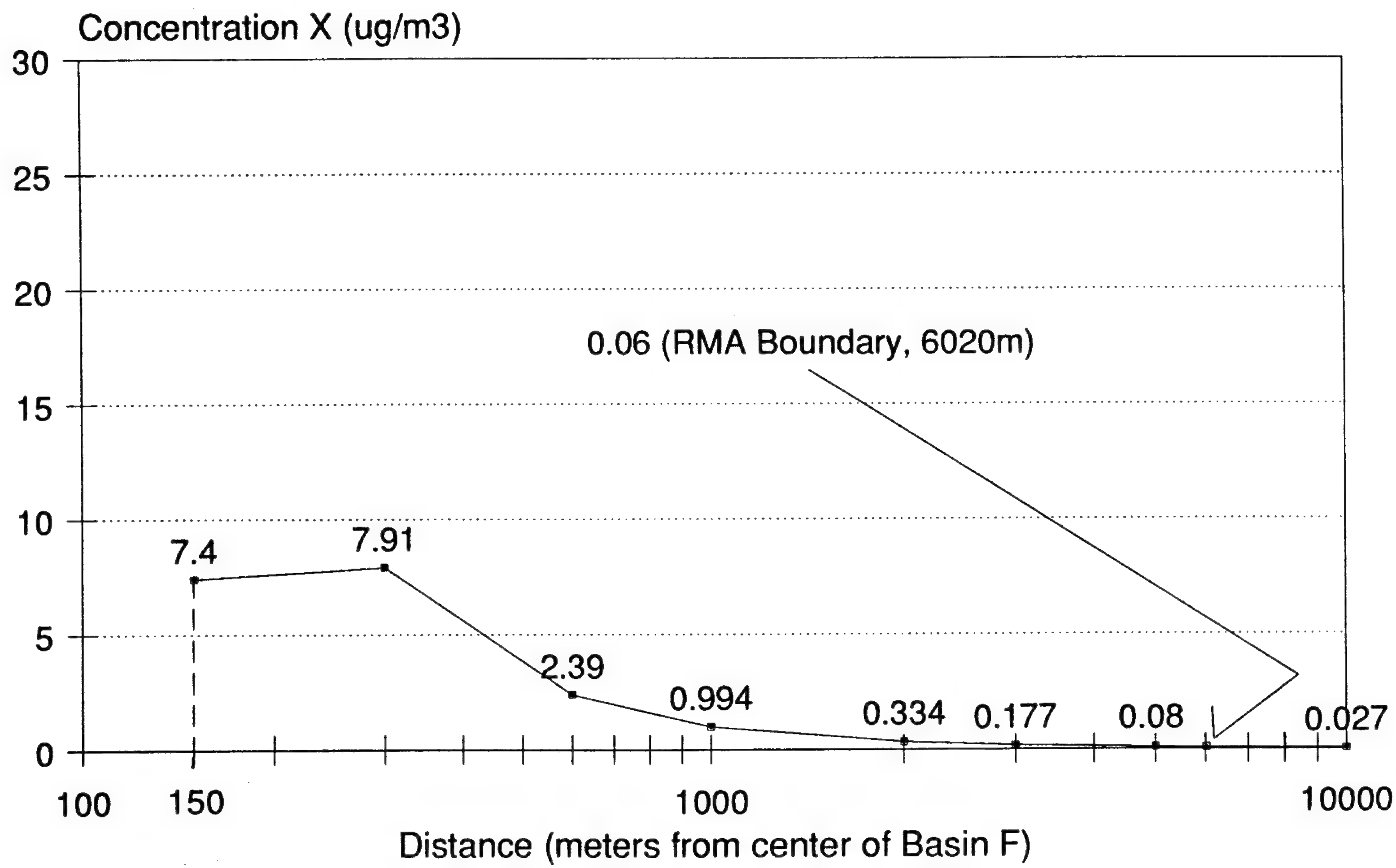
FY89-90 Scaled Annual Avg Concentration



RMA SOUTH RADIAL

FY89-90 Scaled Annual Avg Concentration



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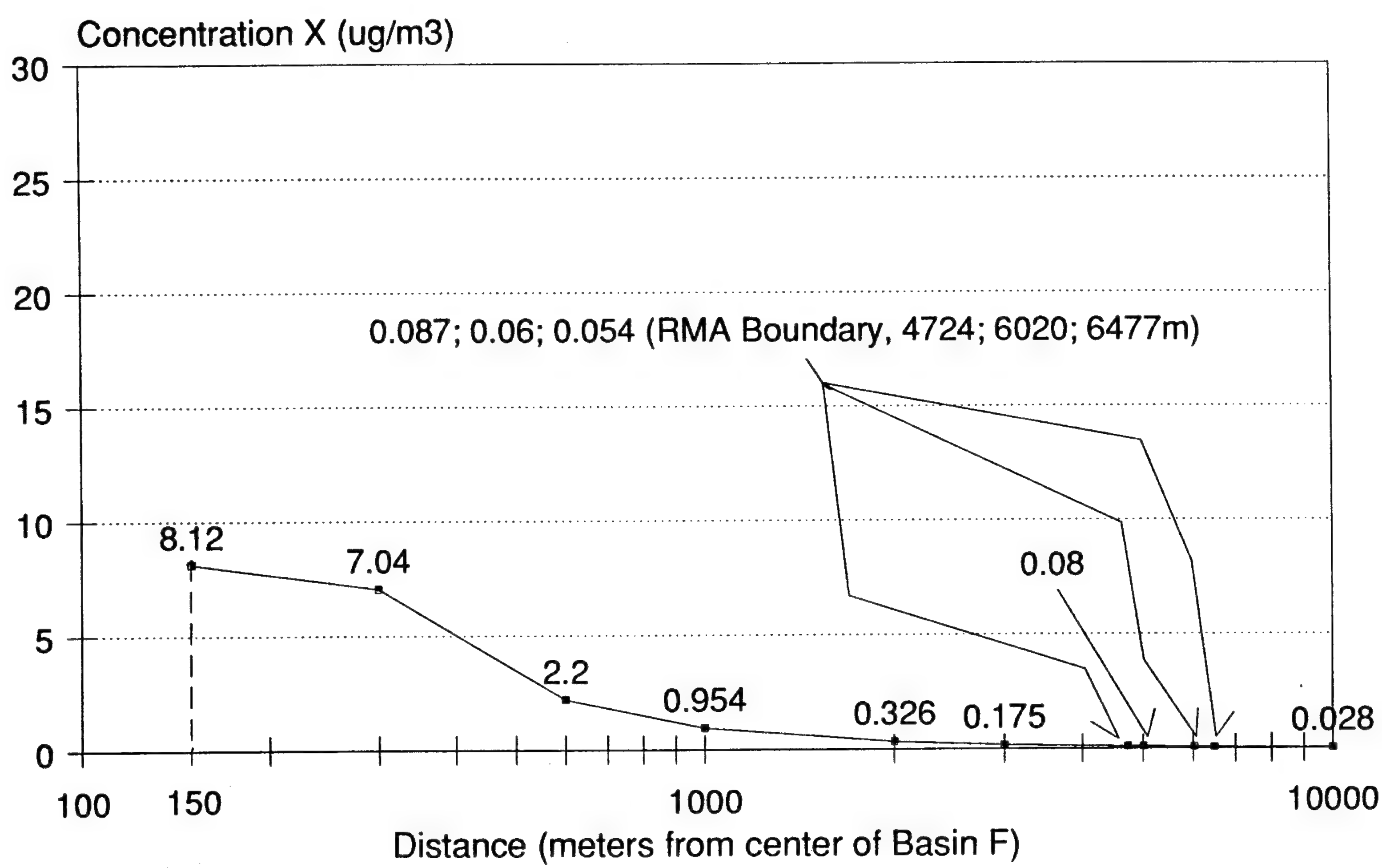
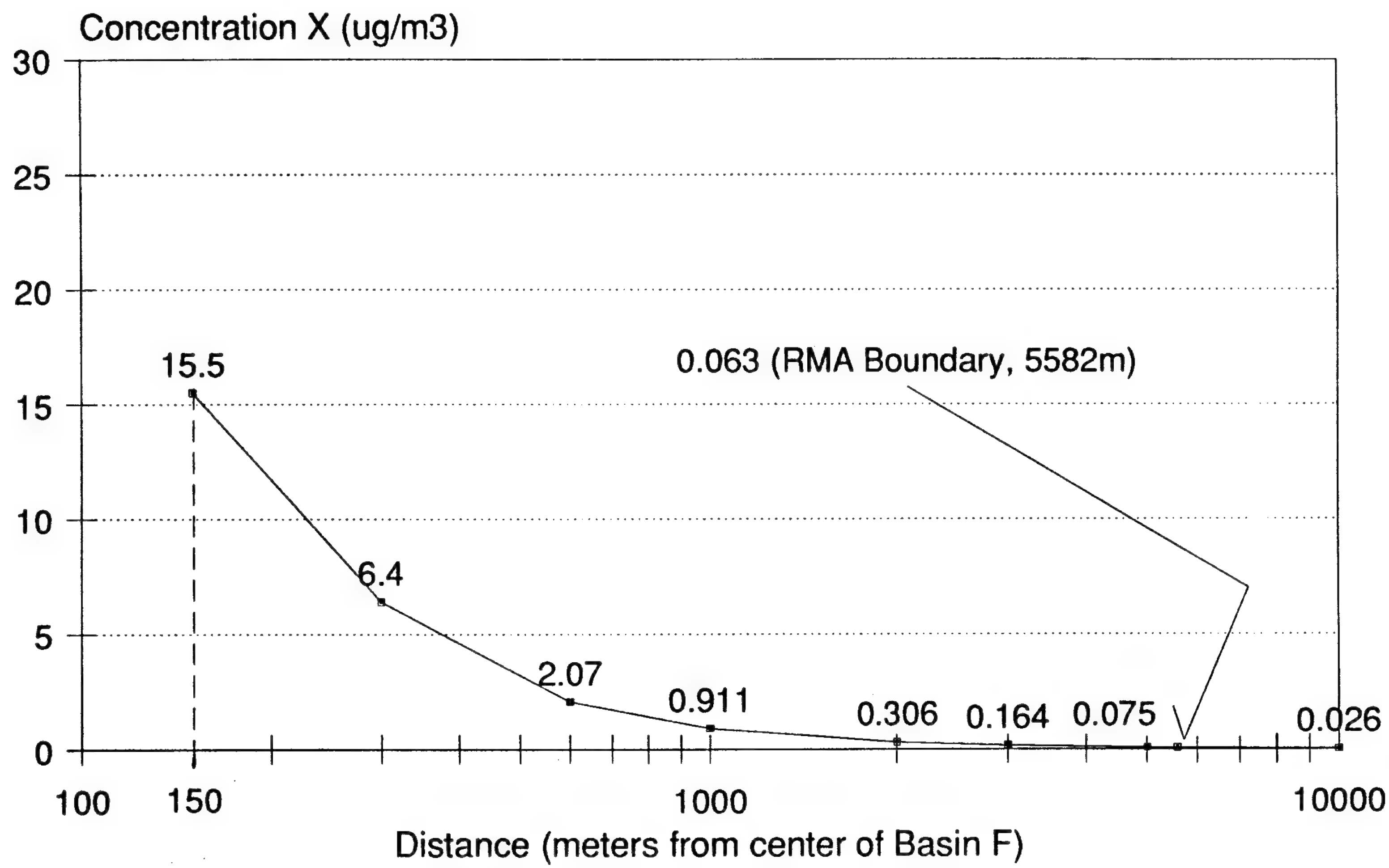


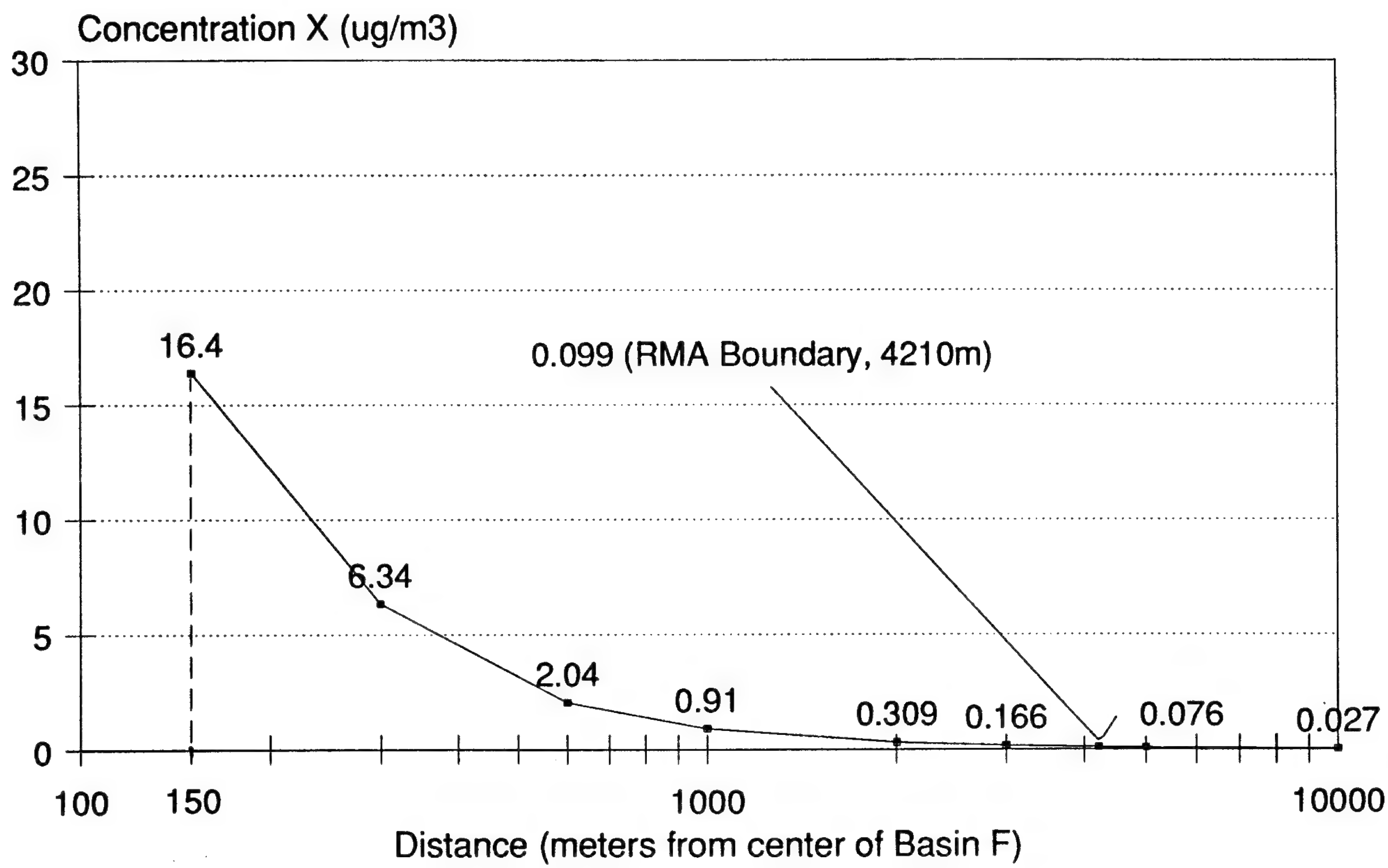
RMA SOUTHWEST RADIAL

FY89-90 Scaled Annual Avg Concentration



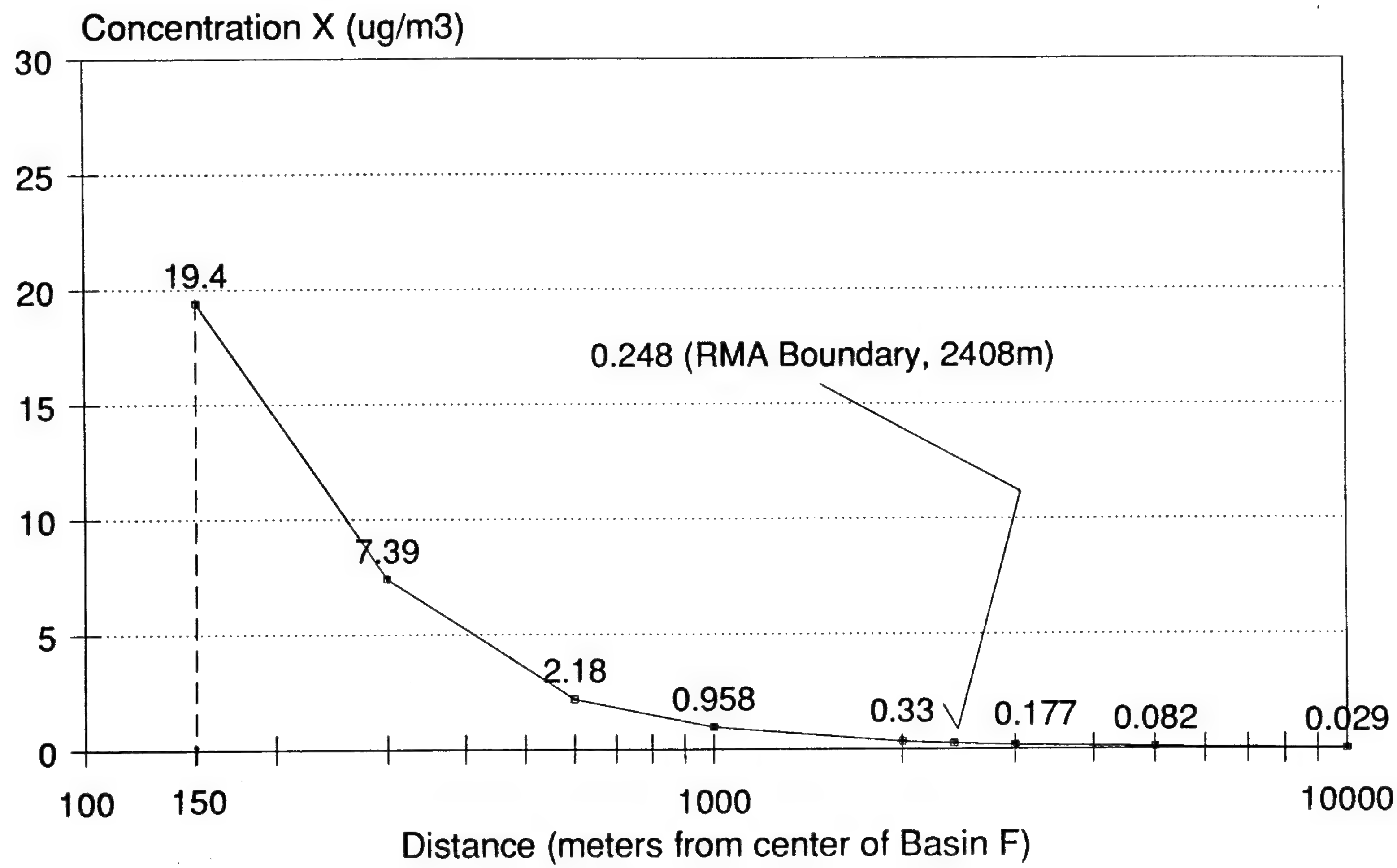
RMA WEST-SOUTHWEST RADIAL

FY89-90 Scaled Annual Avg Concentration



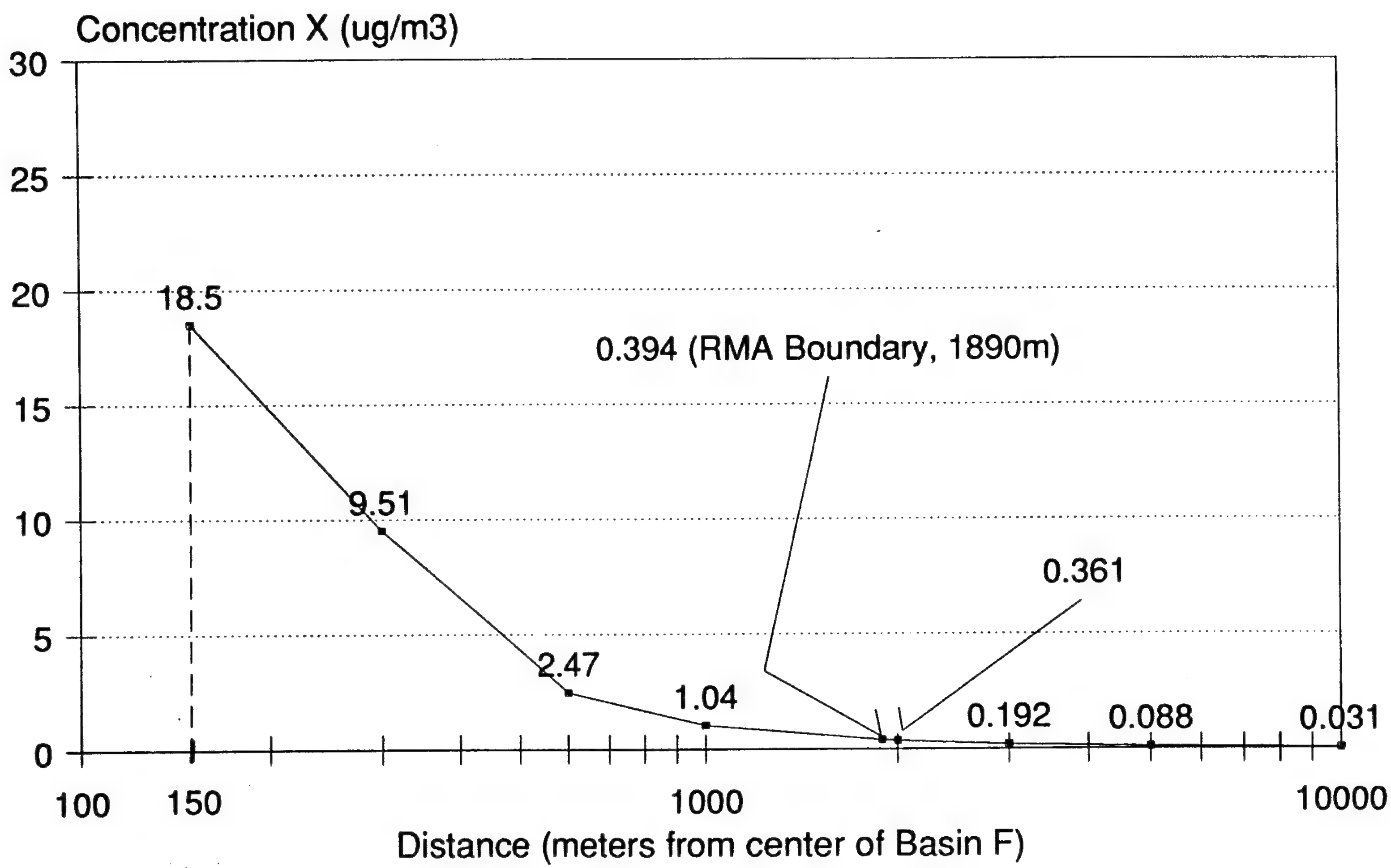
RMA WEST RADIAL

FY89-90 Scaled Annual Avg Concentration



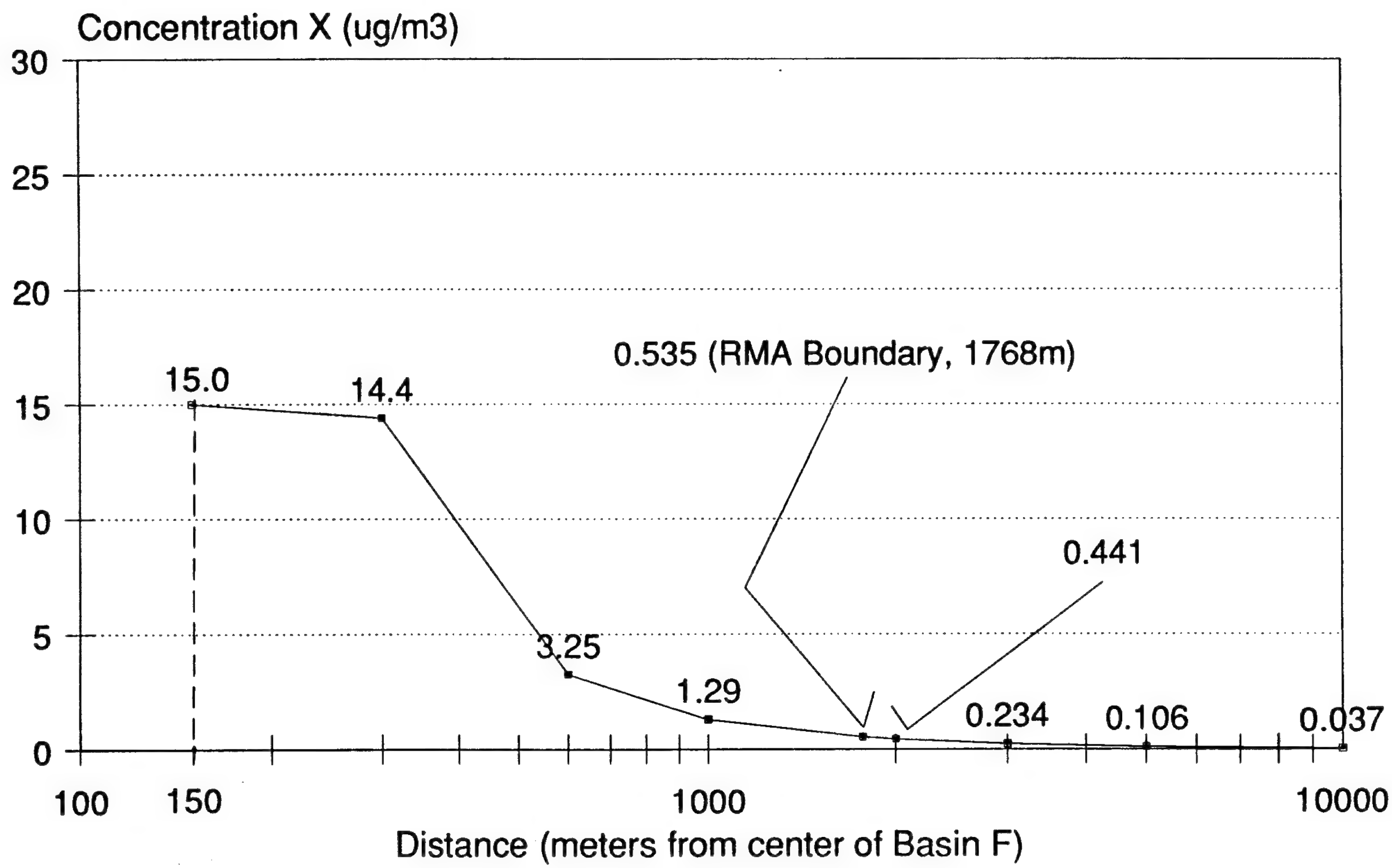
RMA WEST-NORTHWEST RADIAL

FY89-90 Scaled Annual Avg Concentration



RMA NORTHWEST RADIAL

FY89-90 Scaled Annual Avg Concentration



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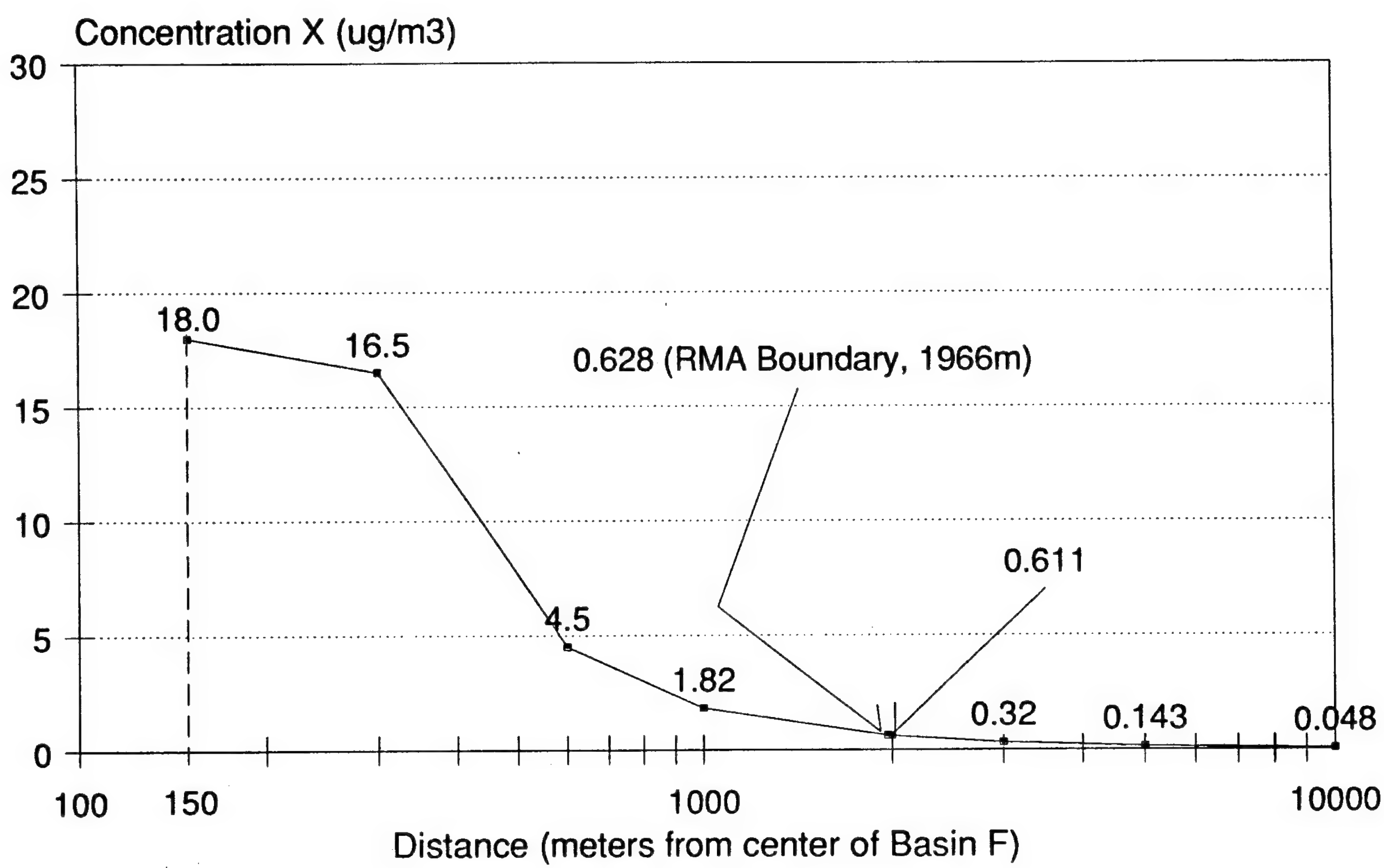

Appendix H

Toxicity Profiles

ALDRIN/DIELDRIN

Health Effects

Aldrin and its closely related epoxide, dieldrin, are known to cause hepatic (liver) tumor in orally-dosed mice, but not rats (EPA, 1990). The carcinogenicity of aldrin and dieldrin is somewhat controversial since long-term studies in rats using relatively high doses produce no treatment-related effect on tumor incidence and mortality, while studies using mice report a dose-related increase in hepatocellular carcinomas. Furthermore, mice appear to be considerably more sensitive to spontaneous liver tumors than most laboratory animals. This sensitivity may in fact play some role in the potent carcinogenicity of aldrin and dieldrin observed in mice. Based on the mice liver tumor data, the Carcinogen Assessment Group of the EPA has classified aldrin and dieldrin as Group B_2 carcinogens (probable human carcinogens) (EPA, 1990). In support of the mice data, aldrin and/or dieldrin have been demonstrated to cause chromosomal aberrations in mouse, rat and human cells as well as forward mutations in chinese hamster V79 cells and unscheduled DNA synthesis in rats and human cells (EPA, 1990). In contrast these compounds have produced negative effects in a number genotoxic test systems.

Aldrin and dieldrin are toxic to reproductive system and may cause teratogenic effects. Reported reproductive effects, depending on dose, species, and gestational timing, include decreased fertility, increased fetal death, and effects on gestation. Teratogenic effects include cleft palate, webbed foot, and skeletal anomalies. Other noncarcinogenic effects attributed to chronic exposure to aldrin and dieldrin include liver toxicity (hyperplasia) and central nervous system abnormalities. Both chemicals are moderately toxic, following acute exposures with rat oral LD_{50}s ranging from 39-60 mg/kg (Merck, 1983).

Dose-Response Parameter Estimates

The dose-response parameter estimates for carcinogens and noncarcinogens are computed differently by EPA; therefore, these estimates are presented separately below.

CARCINOGENIC EFFECTS

Aldrin and dieldrin are classified as probable human carcinogens (Group B2) by the EPA. The Cancer Assessment Group (CAG) of EPA has computed an inhalation cancer potency estimate for aldrin and dieldrin of 17 and 16 $(mg/kg/day)^{-1}$, respectively (EPA, 1990). The estimates were based on an increased the incidence of gastric and lymphosarcoma cancer in pesticide manufacturer workers exposed to aldrin and dieldrin over a twenty year duration (Van Raalte, 1977; EPA, 1990).

Oral Cancer Potency Estimate: Aldrin - 17 $(mg/kg/day)^{-1}$;
Dieldrin - 16 $(mg/kg/day)^{-1}$
(EPA, 1990).

Inhalation Cancer Potency Estimate: Aldrin - 17 $(mg/kg/day)^{-1}$;
Dieldrin - 16 $(mg/kg/day)^{-1}$
(EPA, 1990).

NONCARCINOGENIC EFFECTS

The Office of Health and Environmental Assessment has derived a chronic oral reference dose (RfD) for aldrin of 3×10^{-5} mg/kg/day (EPA, 1990) based on significant increases in liver-to-body weight ratio and kidney and liver lesions (Fitzbugh et al., 1964). An uncertainty of extrapolation from animals to humans (10), the uncertainty in the range of human sensitivities (10), and to convert the results of a LOAEL to a NOAEL (EPA, 1990). An inhalation RfD is not currently available, consequently inhalation exposure was not evaluated in this analysis.

A chronic oral RfD for dieldrin of 5 x 10^{-5} mg/kg/day (EPA, 1990) has been derived by the Office of Health and Environmental Assessment based on an increased occurrence of hepatic lesions in rats administered dietary doses of dieldrin ranging from 0.0 and 10.0 ppm (Walker, 1969). An uncertainty factor of 100 was incorporated to allow extrapolation of dose levels from laboratory animals to humans (10) and an additional factor of 10 to account for uncertainty in the threshold for sensitive humans (EPA, 1990). An inhalation RfD is not currently available for dieldrin.

Oral RfD: Aldrin - 3 x 10^{-5} mg/kg/day (EPA, 1990).
Dieldrin - 5 x 10^{-5} mg/kg/day (EPA, 1990).

REFERENCES

EPA (U.S. Environmental Protection Agency). 1990. Integrated Risk Information System (IRIS). Access Date: October 1990. [A computerized data base.]

Fitzbugh, O.G., A.A. Nelson and M.L. Quaife. 1964. Chronic Oral Toxicity of Aldrin and Dieldrin in Rats and Dogs. Food Cosmetology Toxicology. 2:551-562.

Merck Index. 1983. An Encyclopedia of Chemicals, Drugs and Biologicals. Tenth Edition. Merck and Company, Inc. Rathway, New Jersey.

Van Raalte, H.G.S. 1977. Human Experience with Dieldrin in Perspective. Ecotoxicology Environmental Safety. 1:203-210.

Walker, A.I.T., D.E. Stevenson, J. Robinson, E. Thorpe and M. Roberts. 1969. The Toxicity of Pharmacodynamics of Dieldrin (HEOD): Two Year Oral Exposures of Rats and Dogs. Toxicology and Applied Pharmocology. 15:345-373.

BENZENE

Health Effects

Benzene is a recognized human carcinogen (IARC, 1982). Several epidemiological studies provide sufficient evidence of a causal relationship between benzene exposure and leukemia in humans. Applying the criteria for weight of evidence proposed by the Carcinogen Assessment Group of the EPA (50 Federal Register 46948 Wed. Nov. 13, 1985), benzene is most appropriately designated as a Group A (human) carcinogen. Benzene is a known inducer of aplastic anemia in humans, with a latent period of up to 10 years. Similarly, adverse effects on the blood-cell-producing systems occur in animals exposed to benzene. In both humans and animals, benzene exposure is associated with chromosomal damage, although it is not mutagenic in microorganisms. Benzene was fetotoxic and caused embryolethality in experimental animals.

Exposure to very high concentrations of benzene [about 20,000 ppm (66,000 mg/m^3) in air] can be fatal within minutes (IARC, 1982). The prominent signs are central nervous system depression and convulsions with death usually following as a consequence of cardiovascular collapse. Milder exposure can produce CNS disturbances indicated by vertigo, drowsiness, headache, nausea, and eventually unconsciousness if exposure continues. Deaths from cardiac sensitization and cardiac arrhythmias have also been reported after exposure to unknown concentrations. Although most benzene hazards are associated with inhalation exposure, dermal absorption of liquid benzene may occur, and prolonged or repeated skin contact may produce blistering, erythema, and a dry, scaly dermatitis. The acute oral LD_{50} value of benzene in rats ranges from 3.4 g/kg (immature rats) to 5.6 g/kg (older adult rats, EPA, 1980).

Dose-Response Parameter Estimates

The dose-response parameter estimates for carcinogens and noncarcinogens are computed differently by EPA; therefore, these estimates are presented separately below.

CARCINOGENIC EFFECTS

The Cancer Assessment Group (CAG) of the EPA has computed a cancer potency estimate of 2.9×10^{-2} $(mg/kg/day)^{-1}$ for both inhalation and oral exposure routes (EPA, 1990). This potency estimate was based on the increased risk of leukemia in workers occupationally exposed to airborne benzene using data pooled from several studies (Rinsky et al., 1981; Ott, 1978; Wong, 1983).

Oral Cancer Potency Estimate: 2.9×10^{-2} $(mg/kg/day)^{-1}$ (EPA, 1990).

Inhalation Cancer Potency Estimate: 2.9×10^{-2} $(mg/kg/day)^{-1}$ (EPA, 1990).

NONCARCINOGENIC EFFECTS

No dose-response estimates for noncarcinogenic effects have been developed by EPA for benzene.

REFERENCES

EPA (U.S. Environmental Protection Agency). 1980. Ambient Water Quality Criteria for Benzene. Office of Water Regulations and Standards, Criteria and Standards Division. Washington, D.C. October 1980. EPA 440/5-80-018.

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Ott, M.G., J.C. Townsend, W.A. Fishbeck, and R.A. Langner. 1978. Mortality Among Workers Occupationally Exposed to Benzene. Arch. Environ. Health. 33:3-10.

Wong, O., R.M. Morgan, and M.D. Whorton. 1983. Comments on NIOSH Study of Leukemia in Benzene Workers. Technical report submitted to Gulf Canada, Ltd., by Environmental Health Associates, August 31.

CARBON TETRACHLORIDE

Health Effects

Carbon tetrachloride has demonstrated carcinogenicity in mice, rats, and hamsters; inducing liver tumors in all of the species (IARC, 1979; EPA, 1980). In addition, mice also displayed a high incidence of tumors of the adrenal gland (Weisburger, 1977). The few case reports associated with carbon tetrachloride provide limited, but not sufficient, evidence to confirm human carcinogenicity. On the basis of the criteria proposed by the Carcinogen Assessment Group of the EPA for evaluating the overall weight of evidence for carcinogenicity to humans, carbon tetrachloride is classified as a Group B2 carcinogen (probable human carcinogen). Carbon tetrachloride also causes liver and kidney damage in both animals and humans. Guinea pigs repeatedly exposed to carbon tetrachloride vapor for several months exhibited damage to the optic nerve and degeneration of the myelin sheath of the sciatic nerve (Smyth et al., 1936). Pretreatment or concomitant administration to rats of trichloroethylene or chloroform markedly potentiated the hepatotoxicity of carbon tetrachloride (NTP, 1986).

Rats exposed to carbon tetrachloride _in utero_ exhibited hepatic abnormalities at birth (EPA, 1984). It has produced degenerative changes in testicular histology in rats following intraperitoneal injection at high doses which eventually resulted in aspermatogenesis and functional male infertility (EPA, 1984).

Six of seven point mutation studies utilizing bacterial test systems have yielded negative results (EPA, 1984). The remaining study was preliminary and suggestive of a weak mutagenic response. Problems associated with most of the studies result in insufficient evidence to establish genotoxicity as an effect following carbon tetrachloride exposure (EPA, 1984). The National Toxicology Program (NTP) reports in its 1986 annual plan (NTP, 1986) that negative results were obtained in mutagenicity tests with _salmonella_. Carbon tetrachloride has been nominated for carcinogenicity tests in both mice and rats by inhalation route (NTP, 1986).

Dose-Response Parameter Estimates

The dose-response parameter estimates for carcinogens and noncarcinogens are computed differently by EPA; therefore, these estimates are presented separately below.

CARCINOGENIC EFFECTS

Carbon tetrachloride is classified as a probable human carcinogen (Group B2) by the EPA. The Cancer Assessment Group (CAG) of EPA has computed an oral cancer potency estimate of 0.13 $(mg/kg/day)^{-1}$ (EPA, 1990). This estimate was based on the results of several studies in which carbon tetrachloride produced hepatocellular carcinomas in all species tested (rats, mice, and hamsters) (EPA, 1990). An inhalation cancer potency estimate of 0.13 $(mg/kg/day)^{-1}$ was calculated by the EPA using a route-to-route extrapolation method based on the oral cancer potency factor as stated above (EPA, 1990).

Oral Cancer Potency Estimate: 0.13 $(mg/kg/day)^{-1}$ (EPA, 1990).

Inhalation Cancer Potency Estimate: 0.13 $(mg/kg/day)^{-1}$ (EPA, 1990).

NONCARCINOGENIC EFFECTS

The EPA has computed an oral reference dose of 7.0×10^{-4} $(mg/kg/day)^{-1}$ for carbon tetrachloride (EPA, 1990). this dose was based on a study in which male rats were given 1, 10, or 33 mg/kg/day by corn oil gavage, 5 days/week for 12 weeks. Liver lesions, as evidenced by mild centrilobular vacuolization and statistically significant increases in serum sorbitol dehydrogenase activity, were observed at the 10 and 33 mg/kg/day doses (EPA, 1990). An uncertainty factor of 100 allows for interspecies and intrahuman variability and extrapolation from subchronic to chronic duration of exposure (EPA, 1990). An inhalation RfD is not available.

Oral Reference Dose: 7.0×10^{-4} mg/kg/day (EPA, 1990).

REFERENCES

EPA (U.S. Environmental Protection Agency). 1980. Ambient Water Quality Criteria for Carbon Tetrachloride. Office of Water Regulations and Standards, Criteria and Standards Division, Washington, D.C. October 1980. EPA 440/5-80-026.

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EPA. 1990. Integrated Risk Information System (IRIS). Access Date: October 1990. [A computerized data base.]

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Smyth, H.F., H.F. Smyth, JR., and C.P. Carpenter. 1936. The Chronic Toxicity of Carbon Tetrachloride: Animal Exposure and Field Studies. J. Ind. Hyg. Toxicol. 18:277-298.

Weisburger, E.K. 1977. Carcinogenicity Studies on Halogenated Hydrocarbons. Environ. Health Perspect., 21:7-16.

CHROMIUM

Health Effects

The hexavalent form of chromium is of major toxicological importance in higher organisms. A variety of chromate (Cr VI) salts are carcinogenic in rats following inhalation exposure, although carcinogenicity has not been demonstrated following oral exposures (EPA, 1990). An excess of lung cancer has been observed among workers in the chromate-producing industry. Chromium has been classified by EPA as a Group A carcinogen, based upon consistently positive results of epidemiological studies (EPA, 1990).

Inhalation of hexavalent chromium salts causes irritation and inflammation of the nasal mucosa, and ulceration and perforation of the nasal septum. Cr VI also produces kidney damage in animals and humans. The liver is also sensitive to the toxic effects of hexavalent Cr, but apparently less so than the kidneys or respiratory system. Cr III is less toxic than Cr VI; its main effect in humans is a form of contact dermatitis in sensitive individuals (EPA, 1984). Generally, Cr VI is mutagenic bacterial, yeast, and some mammalian test systems, where as Cr III is not (EPA, 1990). Very little data on reproductive/developmental effects of chromium compounds is available although it appears that Cr (VI) trioxide has shown teratogenic effects in the hamster.

Dose-Response Parameter Estimates

Hexavalent chromium is classified as a carcinogen, and trivalent chromium is classified as a noncarcinogen. Because significant conversion between different chromium forms occurs in the body, exposure to one form may result in exposure to all forms (EPA, 1990). Therefore, dose-response parameter estimates are presented for the more toxic form (i.e., hexavalent). The dose-response parameter estimates for carcinogens and noncarcinogens are computed differently by EPA; therefore, these estimates are presented separately below.

CARCINOGENIC EFFECTS

The cancer assessment group (CAG) of the EPA has assigned an inhalation cancer potency estimate for hexavalent chromium of 41 $(mg/kg/day)^{-1}$ (EPA, 1990). This cancer potency estimate is based on a study of lung cancer mortality in occupationally exposed chromate workers (Mancuso, 1975). Hexavalent chromium was assumed to constitute one half of the total chromium exposure. Chromium has not proven to be carcinogenic via oral exposures, thus only an inhalation value has been derived by EPA.

Inhalation Cancer Potency Estimate: 41 $(mg/kg/day)^{-1}$ (EPA, 1990).

NONCARCINOGENIC EFFECTS

The EPA has derived an oral reference dose (RfD) for hexavalent chromium of 5×10^{-3} mg/kg/day (EPA, 1990). This estimate was based on a NOAEL (no-observed-adverse-effect-level) of 25 mg/l (the highest dose used) in a one-year drinking water study in rats (MacKenzie et al., 1958). An uncertainty factor of 500 was incorporated to account for uncertainty in extrapolating animal data to humans (10), to account for sensitive human subgroups (10), and an additional factor of five (5) since the study did not examine lifetime exposure (EPA, 1990). An inhalation RfD is not currently available.

Oral RfD: 5×10^{-3} mg/kg/day (EPA, 1990).

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DIBROMOCHLOROPROPANE

Health Effects

DBCP was found to be carcinogenic in several animal bioassays via oral, inhalation and dermal routes of exposure. In a gavage study using mice and rats, DBCP produced significantly increased incidences of squamous-cell carcinomas of the forestomach in both sexes of both species and mammary adenocarcinomas in female rats (EPA, 1985). In an inhalation study, rats had increased incidences of nasal cavity tumors and tumors of the tongue, while mice had increased incidences of nasal cavity tumors and lung tumors (EPA, 1985). Dermal exposure resulted in increased incidences of skin and lung tumors in mice (EPA, 1985). DBCP, has been classified by EPA as a Group B2 carcinogen (probable human carcinogen).

Animal studies have reported effects on the liver and kidney ranging from dilatation of the sinusoids and centrilobular congestion to cirrhosis and necrosis of the liver. Cloudy swelling of the epithelium of the proximal convoluted tubules and increased amounts of interstitial tissue have been found in the kidneys (EPA, 1985). Effects on blood cells such as severe leukopenias and anemias in exposed monkeys and decreased activity of phagocytic cells in exposed rats (EPA, 1985). Men occupationally exposed to DBCP during its manufacture were found to have abnormally low sperm counts (EPA, 1985). Male rats exposed to DBCP during subchronic toxicity studies were also found to have abnormally low sperm cells as well as degenerative changes in the seminiferous tubules, decreased weight of the testes, and an increased proportion of abnormal sperm cells (EPA, 1985).

In studies with DBCP, the National Toxicology Program (NTP) reported no effects on dominant lethal frequency in mice receiving intraperitoneal and subcutaneous injections (NTP, 1985a). It was also positive in the Ames assay and caused somatic cell mutations and

chromosomal aberrations in Drosophila melanogaster (EPA, 1985). Chromosomal aberrations and positive evidence of sister chromatid exchange have been reported in Chinese hamster ovary cells (NTP, 1986).

Dose-Response Parameter Estimates

The dose-response parameter estimates for carcinogens and noncarcinogens are computed differently by EPA; therefore, these estimates are presented separately below.

CARCINOGENIC EFFECTS

The EPA has developed an oral cancer potency estimate of 22 $(mg/kg\text{-}day)^{-1}$ for dibromochloropropane (EPA, 1990). This estimate was based on a study in which rats and mice were given doses of dibromochloropropane by gavage and skin application. Effects were observed in the forestomach, mammary glands, lungs and skin (SRC, 1982; EPA, 1985, 1986). An inhalation cancer potency estimate of 22 $(mg/kg\text{-}day)^{-1}$ was developed based on an inhalation study in which rats and mice experienced lung, nasal cavity, tongue pharynx, and adrenal cortx effects after exposure. Specific details of the above studies were not available.

Oral Cancer Potency Estimate: 22 $(mg/kg\text{-}day)^{-1}$ (EPA, 1990)

Inhalation Cancer Potency Estimate: 22 $(mg/kd\text{-}day)^{-1}$ (EPA, 1990).

NONCARCINOGENIC EFFECTS

No dose-response estimates for noncarcinogenic effects have been developed by EPA for bicycloheptadiene.

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